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Medical Personnel Problem

There has been much talk about a shortage of doctors in the armed forces. Then Senator Pepper's Committee suddenly discovers that we have too many medical men in the armed forces which leaves too few for the civilian population.

You cannot reduce this question down to statistics without taking many other factors into consideration. A lot has been said about our having a fixed ratio of 6.5 medical men for each one thousand enlisted men, whereas the British get along with 4.75. To consider these ratios alone would be a sublime folly. Let us give consideration to a few of the factors which exist today.

First, we are training a huge army quickly. They have to be housed in new quarters; sanitation must be considered; preventive measures have to be taken care of—inoculations, reactions. In the toughening process there are many who require medical attention and guidance. It is a new life for the men—new conditions, new quarters. Most of our fighting forces will probably be sent overseas. They are sent to various points with the widest differences in climatic conditions: to Greenland, to the South Seas, to Australia, to Egypt, to India. Sanitation facilities in most of these places are not adequate. They will encounter all of the potential hazards of tropical infections. In action the casualties will be infinitely higher than they ever are in civilian life, and they must receive proper and prompt surgical and medical attention.

The Senator Pepper Committee can be assured that the medical officers are quite busy in most cases before any battle develops. Medical men in Army service, especially when they are sent abroad, are obliged to work under conditions which are not comparable to that of a well-ordered, organized, and large hospital with its established personnel and equipment. There is a shortage of medical men for war time needs. There will be a shortage among the civilian population but it is easier to step up the efficiency of the civilian physician by reorganization than it is in the Army.

We need more medical men, and more medical men should be trained, but we feel that Senator Pepper's Committee should consider very carefully the possibility of getting more medical men through the universities and colleges.

Dysentery in the Middle and Far East

Among the most dangerous diseases in tropical and subtropical climates, and in temperate climates if conditions favor their spread, are dysentery and typhus fever. Bacillary dysentery, under certain conditions, is likely to occur anywhere. No country is exempt and Europeans of all ages and of both sexes are susceptible. In times of peace in Europe, bacillary dysentery is kept under control, but in wartime it is a constant menace. The disease is more prevalent in the tropics, and epidemics are of bacillary origin.

The point is, dysentery is a wartime disease; that is, its prevalence is furthered by wartime conditions. Overcrowding, intercurrent disease, a deficiency dietary and malnutrition predispose. Flexner's dysentery may cause epidemics in military barracks, prisons, and asylums, and in air raid shelters. Dysentery is prevalent in the tropics during the early summer months, the rainy season and in the autumn, and is spread by fecal contamination of food or water, either directly from an infected person or indirectly by a house fly.

Amebic dysentery is caused by infection of the colon by Endamœba histolytica and is distributed mostly throughout the tropics and subtropics, but occasionally occurs in temperate climates. All ages and both sexes are likely to suffer from the disease, but it is comparatively rare in children. Endamœba histolytica enters the body in its cystic form by way of the mouth, in drinking water or food, especially by vegetables, contaminated by convalescent or contact carriers, while flies directly, or indirectly, may convey the infection. The incubation period varies considerably from three weeks to three months. It is curable in uncomplicated cases, indeed in such cases the patients invariably recover, and a large proportion are cured permanently.

Complications occur, such as liver abscess, colonic perforation with peritonitis which is frequently fatal, and brain abscess which is invariably fatal. The diagnosis must be as accurate as possible. An x ray examination after a barium meal eliminates many lesions entering into the differential diagnosis, and in distinguishing malignant disease, chronic bacillary dysentery, ulcerative colitis, bilharzial and balantidial disease of the colon from chronic amebiasis, sigmoid-

oscopy reenforced by laboratory methods of examination is indispensable. From the preventive viewpoints it is highly important to ascertain that those handling food are not carriers. Food should be protected from flies and measures taken to avoid contamination of water and uncooked vegetables.

Outbreaks of dysentery, during such a war as is being waged now, are likely to occur, indeed they have occurred in the Middle East, the Far East and in Europe, and may break out even in the United States. All conditions favor such outbreaks—overcrowding, perhaps especially on shipboard, improper food, lack of adequate and domestic sanitation and hygiene. The semi-starved or those given an inadequate diet are prone to contract bacillary dysentery; the amebic form is rare in temperate climates.

Now that destruction rather than conservation of life seems to be the prime object, it is obvious that methods to control the spread of infection may be more lax. Vigilance is called for to prevent the bringing in of diseases such as bacillary dysentery.

Prophylactic or Immunizer

A prophylactic differs from an immunizing agent. For example, the term diphtheria prophylactic was introduced to cover those medicinal agents for producing active immunity from diphtheria. Diphtheria antitoxin is not a form of diphtheria prophylactic because diphtheria antitoxin is an antidiphtheritic serum, or a derivative of it, and is an agent employed to confer passive immnity. Diphtheria prophylactic is a vaccine rather than a serum, using the term vaccine to imply all agents given to provoke an immune reaction and to create active immunity. By a serum is meant one containing an antibody, as diphtheria antitoxin, and when the serum is injected into the patient a passive immunity is brought about.

Up to recent times the great value of diphtheria prophylactic had not been recognized in Britain while even now, perhaps, its value has not been appreciated fully. In 1937, there were 61,399 cases of diphtheria in England and Wales and 2,963 deaths, almost all in children. In those parts of the United States and Canada where preventive inoculation has been universal and done carefully, it is said that diphtheria has practically disappeared. In Hamilton, Ontario, with a population of 175,000, it has been stated that there has been no case of diphtheria during the past five years. On the other hand, in the city of Quebec, where inoculation has not been practiced, the deaths, according to reports, were numerous. The death rate of children from one to fifteen years from diphtheria is greater by far in England and Wales than in the United States, in New York in particular. Again, tetanus antitoxin is efficient as a preventive.

Convalescent measles serum, applied at the proper time and in sufficient doses, has been reported of value for measles, and the same may be said as to scarlet fever antitoxin. Some are enthusiastic with regard to its therapeutic merit. Physicians in the United States are more convinced of the efficacy of antibacterial serums in general than in Britain, but then it is well known that British physicians are more conservative and are wary of trying experiments, as they require absolute proof before they try new remedies.

Physician Drug Addicts

With the exception of a small minority, physicians now are more alert to the dangers surrounding the use of narcotic drugs, and no longer prescribe them indiscriminately. This is one of the conclusions drawn by H. J. Anslinger, Commissioner of Narcotics, in his 1940 report on traffic in opium and other dangerous drugs. This is probably true, but the proportion of physicians among the drug addicts is about eight times greater than that of physicians in a comparable adult male population, according to statistics by M. J. Pescor, clinical director of the U. S. Public Health Service Hospital, Lexington, Ky., and based on the drug addicts admitted to the Public Health Service Hospital.

In other words, drug addiction appears to be a definite occupational hazard among physicians. The medical practitioner knows what morphine can do, and the drug is always available to him. In his study Pescor has drawn some interesting conclusions which show how the physician addict differs from the typical ordinary addict. The average age of the physician addict is fifty-two, in contrast to thirty-nine for the ordinary addict. He is a voluntary patient rather than a prisoner. He began using drugs at the age of thirty-nine instead of twenty-seven. He began using drugs for the relief of a painful or distressing condition in contrast to simple curiosity and association. He confined himself to the use of morphine instead of using many narcotic drugs. He has made at least three attempts at voluntary cure, while the ordinary addict has made none.

The physician addict has remained abstinent for thirty-two months, in contrast to twenty-four months for the ordinary addict. He relapsed for medical reasons or through alcoholism instead of through association with other addicts. Upon release he has his practice to look forward to, while the ordinary addict has no prospect of employment. Obviously, Pescor says, the physician addict has certain distinct advantages over the ordinary addict. He has a profession, he has a home, he is better educated, his professional knowledge should give him better insight into his problems, and he is in better economic and social circumstances. Yet, despite all these advantages, he has little, if any, better prospect for cure than the ordinary addict.

Papers and Addresses

SOME PRACTICAL SUGGESTIONS ON ARTERIOSCLEROSIS AND HYPERTENSION

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Undoubtedly the greatest predisposing cause of arteriosclerosis and its associated hypertension is the inheritance of a "poor" quality of blood vessel tissues. In no other way is it possible to explain the occurrence of cardiovascular disease of this type in many patients who should not otherwise be afflicted with it. The common familiar incidence of sclerosis and increased tension certainly supports this view. Heredity, it may be said, therefore, endows certain persons with a vascular system composed of good material well able to stand the wear of life, while others are given inferior material that becomes brittle and loses its elasticity.

There are numerous direct causes of arterial disease and among these heavy physical work is responsible for about two-thirds of all cases because of permanent injury to blood vessels through overdistention resulting from sudden increase in blood pressure. The arteries of the upper extremities are first hardened, although in women of the peasant class the greatest changes in the arteries are found in the lower extremities. Conversely, in those whose work is mental rather than physical, hardening of the arteries usually occurs predominantly in the brain and heart.

Nervous influences are next to hard manual labor as a cause of hypertension and sclerosis and is especially seen in men who live under a constant nervous tension. By this I mean that group of persons whose welfare depends upon the ups and downs of fortune in business life, the fluctuations of the stock market, the strong expectation of a fortune tomorrow and the harrowing uncertainty of its possible loss the next day. Such individuals become the special prey of cerebral and coronary sclerosis, following the rule of developing hardening of the arteries of that part of the vascular area upon which the individual has thrown the greatest strain.

Individuals of sedentary habits, and especially those addicted to the pleasures of the table and who take tea and coffee in excess, are prone to hardening of the arteries. Obesity commonly is seen in the hypertensive patient. It is, of course, favored by excessive eating and sedentary habits and gives rise to imperfect digestion and the absorption of protein toxins especially from meat. Chronic constipation favors the absorption of these toxic products from the intestines and possibly even stimulates the actual production in the intestines of blood pressure raising substances.

Alcohol does not raise blood pressure, but it does increase the appetite and the amount of food taken. It interferes with the action of the liver, impairs intestinal digestion, directly disturbs metabolism and causes enough toxins ultimately to raise blood pressure.

Tobacco raises the blood pressure by contracting the blood vessels and accelerating the heart and respiration. The moderate smoker has a little increase of blood pressure, about ten mm., although paradoxically an excessive smoker may show little change, but this is because his heart muscle usually has become weakened. To those who lead a quiet life and who reside in a warm climate, tobacco is less harmful than to those in colder climates where life is more active.

Kidney disease, with its injurious effect upon excretion, and glandular disturbances associated with the menopause or following acute or chronic infections, often are associated with and perhaps responsible for high blood pressure.

Prophylaxis and Treatment

With consideration given to the various and diverse factors concerned in the causation of arteriosclerosis and hypertension the following rules or suggestions seem appropriate both as prophylactic and therapeutic measures:

1. Take meals regularly. If one suffers from high blood pressure or organic disease (i.e., heart, lungs and liver), only small amounts of food should be taken at a time, with five meals a day instead of three, and very little liquid with the meal for fear of producing abdominal distention.
2. Eat slowly and masticate well.
3. Stop eating while the desire for food is still present.
4. No red meats and gravies should be eaten. White meat, such as lamb, fowl or fish, a small amount at a time, once a day and prepared simply by stewing, broiling or baking, should be eaten. No preserved or canned meats should be included in the diet.
5. Two or three simple dishes at one meal are enough.
6. Do not eat when in pain, indisposed, angry, irritated, excited, tired, sleepy or in a hurry; miss a meal until conditions are normal.
7. Eliminate too much pie or cake, also canned, preserved, pickled and spiced foods.
8. The best and most natural drink is water an hour before meals or two hours after a meal. The amount of water should also be fitted to the circulatory ability and the condition of the kidneys. It is rarely wise to establish any amount arbitrarily as being the optimum since this will vary greatly, depending upon the amount of water contained in the diet, the exercise taken, the temperature, etc. In general avoid all kinds of beverages, such as artificial drinks charged with gas, because they produce abdominal distention. Those with high blood pressure and organic heart disease should certainly avoid them entirely. A glass of

Vichy water one hour before meals, or two hours after meals, is best.

9. Undereat rather than overeat, especially after the fortieth or forty-fifth year. D'Cheynes's aphorism contains a volume of dietetic wisdom: "Every wise man, after fifty ought to lessen at least the quantity of his aliment and if he would continue free of great and dangerous distempers and preserve his senses and faculties clear to the last, he ought every seven years go on abating gradually and sensibly, and at least descend out of life as he ascended into it, even unto the child's diet."

10. Eat plenty of vegetables, green salads and vegetable soup twice a day. Cereals in limited amount.

11. No condiments, except salt in small amount.

12. Orange juice two or three times a day.

13. Sleep in abundance should be sought and at regular intervals. When possible take a nap of an hour or two in the afternoon. When going to bed, relax completely, casting aside daily cares and mental activities. *Good sleep lowers the blood pressure.* Upon awakening lie quietly for ten or fifteen minutes, dress slowly and never rush.

14. Avoid strenuous exertion, long hours and mental excitement. Have no arguments. Rather lose an argument and save your health than strain nerves and injure health.

15. Walking, especially cross-country walking from three to five miles a day, is one of the best forms of exercise, since it serves to bring the individual into the open under good hygienic conditions, and yet is not likely to be overdone. The best time is in the morning but never immediately after or just before a meal. Golf, horseback riding and gardening also serve the dual purpose of giving exercise and furnishing mental diversion.

It is a mistake to insist that a man who has perhaps been engaged in active business, shall suddenly retire and lead an inactive life. On the other hand, the individual should gradually lessen his activities, and in this way reduce the demands which he makes upon his circulation.

Avoid physical fatigue, breathlessness, heart pain and headache during exercise; they are signs of too much exertion. The amount of exercise varies within a very wide limit but whatever exercise is taken should not be accompanied by sudden rises in blood pressure. While one may not play tennis, a moderate amount of golf, played in a sedate way, may be permitted. The high blood pressure subject has a mental make-up that often will lead him to excess in exercise when it is once started unless this is guarded against. Statistics show that stair climbing apparently produces more hardening of the arteries after forty than standing, sitting or walking.

16. After the age of fifty all nervous tension and worry should be removed as nearly as possible. Mental work, however even that entailing great responsibility, is many times borne well, provided the amount is not so great as to make one feel hounded and overtaxed. Avoid rush or hurry at any time.

17. By all means see to it that the organs of elimination act well. A coarse diet which leaves too much residue or a diet which leaves too little, may be a cause of constipation. The tendency of civilized life in general, and of modern dietetics in particular, is toward the production of lesser quantities of fecal matter and less frequent intervals of evacuation. At no time in history have civilized nations consumed so much meat, eggs, and prepared, partially digested foods.

Omit the habit of reading during defecation. Though often beneficial, it sometimes so blunts the sensitiveness of the rectal nerves that they fail to respond properly. Be regular in the habit of moving the bowels and never neglect the call of nature. When constipated, one must bear in mind the very considerable rise in blood pressure which occurs during the act of defecation and is of special danger in those with cerebral or coronary hardening, due to straining at stool; so avoid straining at stool.

Constipation is a complication which should be treated at its very inception, by maintaining easy evacuations. A laxative diet of stewed prunes or apples will help. On going to bed a tablet of cascara, five or ten grains, will work well. Even though one has a daily evacuation, an enema consisting of six glasses of warm water and a teaspoonful of salt, or plain water, should be used three times a week in addition to the cascara tablet, or one may take epsom or rochelle salts once or twice a week if weakening does not result. This will keeps the bowels clean and the blood pressure will be naturally lowered, with general well being thereafter. With some people buttermilk, if there is no obesity, or sour milk is a laxative.

18. Get all the sunshine possible, also take air and sun baths, but avoid overexposure with resultant sunburn.

19. Cultivate some worthy aim or purpose, for without such an interest life becomes monotonous and a drag.

20. The highest form of human energy is nervous energy, therefore do not waste it.

21. Cultivate happiness and peace of mind in all circumstances and conditions. Happiness exists in the mind only. It costs nothing but will power to get it.

22. Cultivate equanimity by avoiding anger, excitement, hate, anxiety, envy and jealousy, for these are more destructive than violent poisons.

For therapeutic purposes it is essential to recognize that arteriosclerosis, and its accompanying hypertension, is not a disease but the normal biological process of senescence. There is no specific, but it may be said that there is a great tendency to overtreat rather than undertreat this condition. Judicious neglect with careful observation of the foregoing suggestions may be of the greatest advantage.

Hypertension resulting from endocrine dyscrasias, such as the menopause and toxic goiter, should have appropriate treatment of the disturbed glands of internal secretion.

In some patients high blood pressure is temporary, in others it is permanent. Many, when the pressure is lowered, become dizzy, weak and incapacitated. A patient with simple high blood pressure and otherwise well (diastolic pressure not over 105 mm.) should have his diet, and especially the tobacco, coffee, and tea intake, regulated; should have recreation periods once or twice a week; vacations not too infrequently, and should take some brisk purgative once or twice a week. The height of the systolic pressure is of relatively little importance as a guide to treatment, but rather the

high diastolic of 105 or more that requires attention. A low systolic pressure with a high diastolic reading indicates weakening of the heart muscle and also calls for careful consideration.

Above all, the physician must help to adjust the patient's mental attitude. He must remove foci of infection and supervise any weight reduction regime that may be needed. Most important is the *diet* which must be regulated according to whether there is associated arthritis, asthma, diabetes, liver, cardiac or kidney insufficiency, obesity and flatulence. "Hunger days" are often of benefit, with the diet limited to milk and fruit on those days; or two "green days" a week, three or four days apart, on which nothing is eaten but green vegetables, orange juice, two to four pieces of zweiback and the morning cup of coffee decaffeinized. Frequent rest days on which the patient lies quietly in bed or on a couch may prove helpful in advanced cases.

Whether tobacco should be withdrawn absolutely or only lessened in a given case depends on the individual. If the user of tobacco has a thorough control of his habit, is not working excessively, physically or mentally, has his normal sleep at night and therefore does not become weary from insomnia, he may use tobacco with sense and in the amount and frequency that is more or less harmless so far as he is concerned. If such a man, however, is sleepless, overworked or worried, has irregular meals, goes without food, has a series of "dinners" or drinks a good deal of alcohol, he finds a constantly growing need for a frequent smoke and soon begins to use tobacco excessively.

The individual who smokes excessively usually presents symptoms referable to the heart and blood vessels, such as palpitation on exertion lasting perhaps but a short time, sharp stinging precordial pains, less firmness of the apex beat with perhaps irregularity, and cold hands and feet. Before the heart muscle actually weakens, the blood pressure has been increased more or less constantly, perhaps permanently. On the other hand, a heart under the overuse of tobacco may show no signs of disability, but its reserve energy may be impaired and when a serious illness occurs, an operation with the necessary anesthesia must be endured, or when any other sudden strain is put on this heart, it goes to pieces and fails more readily than a heart that has not been so damaged. Theoretically, two or three cigars a day is moderate, and more than five cigars a day may be too much for some persons. Besides the effect on the circulation, no one who uses tobacco can deny that it has a soothing narcotic effect.

A patient with hypertension accompanied by heart pains, dizziness, headache, ringing in the ears, sleeplessness, irritability and dyspnea especially with a high diastolic reading and angiospasm, may well be given vasodilating drugs such as nitroglycerin, mannitol hexanitrate, theobromine with phenobarbital. Bromides are best for those individuals in whom the neurotic element is predominant. Papaverin, is another good antispasmodic, an anodyne, and somewhat of an hypnotic.

The use of allisatin, a combination of garlic and charcoal, does seem to have some good action in preventing or lessening flatulence and inhibiting putrefactive and fermentative processes in the intestines. In fact, by its use indican can be removed from the urine which indicates some influence upon protein digestion and metabolism. Garlic may also be useful in overcoming vertigo since patients who take it are greatly relieved from this symptom. Again, special stress is placed on diet in these cases. A vegetable diet leaves a bulky residue, is more alkaline, and prevents the acidosis, so commonly found in elderly or middle aged persons.

For the last ten years I have used the phosphates in these cases especially where the nervous strain is the cause of the condition. Sodium phosphate and the glycerophosphates are the best forms in which to use this medicament. Phosphorus is of cardinal importance in the organism because it is a component of the neuclei of all cells, leucocytes, neurons, myelin and even the bones. Phosphorus preserves muscular energy, retards muscular fatigue, especially the pathological fatigue in one who suffers with early myocardosis and psychic changes, counteracts general weakness, and if combined with calcium favorably affects the physical and mental status and general well being. In the disorders usually regarded as normal results of old age, such as loss of memory, mental torpor, insomnia, fatigue, etc., the phosphates are said to prolong a useful life. They are actually rejuvenators for these patients.

Vitamin C, or the juice of half a lemon once or twice a day, if digestion is not impaired, tones the blood vessel walls. This tone is necessary because it helps move the blood in the veins back to the heart. It also prevents thrombosis. Large doses of vitamin A will prevent degeneration of arteries and vital organs and does much good to sufferers of arteriosclerosis and hypertension. Vitamin C is of great help to the hypertensive patient.

Yeast is also of value, on account of its lecithin content, which may lower blood pressure.

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INFECTIOUS NONSPECIFIC GRANULOMA OF THE APPENDIX

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On December 18, 1940, Dr. M. D. Keller referred to me a boy, A. N., nine and one-half years of age, who was evidently in pain; he could not walk straight because of the pain in the right side of the abdomen. The patient had been apparently well until December 14, 1940, when he felt a sudden pain in the pit of his stomach. The pain was continuous and was not accompanied by nausea or vomiting. The patient felt a little better after moving his bowels; but the pain recurred and became more localized in the right lower quadrant.

The family history and past history were both unimportant, except that the patient had measles and a tonsillectomy and an adenoidectomy in 1934. The gen-

eral physical examination was apparently negative except for pain and tenderness at McBurney's point. On palpation an irregular and indefinite mass could be felt at times in the right lower quadrant as if a muscle had contracted. The pulse was about 100 and the temperature 100° F. The diagnosis of acute appendicitis was made and an operation was advised.

The patient was admitted to the hospital December 19, 1940, with a temperature of 99.6°, pulse 120, respirations 24; blood count 14,000 white blood cells, and eighty-five percent polymorphonuclears. Urine analysis was negative. Operation was performed the same day. Under one-half percent novocaine anesthesia, a McBurney incision was made through the skin and superficial fascia; the fascia of external and internal oblique muscles were separated in the line of cleavage of their fibres. The peritoneum was incised, and a reddened and very inflamed mass adherent to the appendix and cecum was found. The inflammatory mass being very sensitive, the local anesthesia was supplemented by ether anesthesia. The inflammatory mass was dissected out very carefully from the cecum up to the base of the appendix and the appendix was removed by the phenol and alcohol method.

The mass looked like a mucocele of the appendix. The cecum was greatly congested and hypertrophied at the side of adherence of the tumor mass. The abdominal wall was closed in layers.

Pathological Report, December 23, 1940

GROSS: A tumor mass from appendiceal region, the size of a walnut, was cut open. It consisted of fibrous tissue. No lumen was present.

MICROSCOPIC: Remnants of the appendix were present; the rest of the tissue was composed of inflammatory connective tissue with areas of polynuclears and round cell exudate with some eosinophiles.

DIAGNOSIS: Granuloma about an infected appendix.

The postoperative course was uneventful; the patient went home on Dec. 24, 1940, five days after the operation.

Infectious nonspecific granuloma is far more frequent than the literature on the subject would lead one to believe; however, nonspecific infectious granuloma of the appendix is infrequent in adults and extremely rare in children. In fourteen cases reported in the literature up to 1934, the granuloma involved the appendix.

Nonspecific infectious granuloma occurs in children in regions other than the appendix; it occurs in the ileum and colon, back, genital organs and abdominal muscles. Cases of granuloma of the cecum or ileum following appendectomy have been reported. This condition is directly due to a low-grade infection, causing impairment of the circulation, followed again by a low-grade infection. In either case there is an inflammatory reaction characterized by necrosis and a reparative process acting and reacting with a gradually increasing building up of an inflammatory mass until a granuloma reaching even the size of a cocoanut has formed. Occasionally the reparative process predominates early in the condition and one finds the constricting or stenosing granuloma.

Infections within the gastrointestinal tract, such as appendicitis or diverticulitis, ulcers, either within the stomach or within the intestines, foreign bodies within the bowel lumen, in the wall of the bowel, or lying in the abdomen, such as a purse-string suture, fat pads, or instruments left in the abdomen, splinters penetrating into the abdomen, etc., all these enumerated conditions may be the nucleus for the foundation of an infectious granuloma. Trauma is a frequent cause for this condition, especially trauma which results in a tear of the mesentery which allows foreign material to remain in the abdominal cavity or which may cause an undiagnosed and nonfatal perforation or laceration of the intestinal wall. Extraperitoneal inflammation may spread to or involve the gastrointestinal tract and form a granulomatous mass.

The relation of the appendix to the development of certain hypertrophic masses in the ileocecal region is a moot point. In many cases the unresolved appendicitis is undoubtedly responsible for the formation of a hyperplastic fibriotic mass, the socalled appendicitis fibrotica, but this does not account for all the lesions found in this region. When the appendix is the source, it is found buried in the cecal wall, in the terminal ileum, and forms part of the inflammatory mass. The extension of the inflammation in these cases is by contiguity, and, as might be expected, is mainly pericecal with involvement of the subserosal tissue. The submucous layer of the gut does not appear to be involved. Occasionally tiny abscesses between the appendix and the cecum will be uncovered when the former is mobilized and fistulæ running into the cecum may be found. This type of lesion is quite common; its true nature is not usually appreciated, and resection is rarely performed. The appendix and the cecum show a marked submucous thickening, edema and fibrosis; the appendix participating simply as a component portion of the segment of gut.

The granulomatous tumor consists of a hyperplastic mass; it represents a destructive with a reparative process. Necrosis occurs, accompanied by a productive proliferation composed of round cell infiltration, leucocytes, fibroblasts, connective tissue stroma, new blood vessels, giant cells and often mast cells. Finally, a definite tumor-like mass, a granuloma, forms which may vary in size.

These conditions produce a few vague indefinite symptoms or no symptoms at all similar to chronic appendicitis. Perforation of the appendix in cases with tumors of that organ are extremely rare. The symptoms are those of local infection, bowel obstruction and constitutional reaction. Pain, tenderness, rigidity and a mass are often present locally. Intestinal obstruction occurs if the tumor encroaches on the bowel lumen. The constitutional reactions include fever, leucocytosis and loss of weight. The diagnosis is rarely made except at operation or at necropsy. These cases are often diagnosed as carcinoma, syphilis, or hyperplastic tuberculosis of the bowel. More rarely they have been confused with amebic disease, actinomycosis and bilharziasis.

Microscopically, characteristic yellowish granules are noticed. The granulomatous process might disappear spontaneously. Appendectomy and removal of the granulomatous inflammatory tissue may be followed by subsequent granulomatous involvement of the cecum and ileum.

Carcinoids are very small in size and they rarely cause symptoms of appendicitis, unless they obstruct the lumen with a resultant inflammatory reaction.

Carcinoids are revealed by the microscope only. The treatment of nonspecific infective granuloma is surgical removal. Sometimes a simple surgical exposure of the mass, drainage, or a sidetracking operation of the intestines, results in the disappearance of the tumor. Local removal, if possible, is advisable except when pus is present, when drainage is advisable. If bowel obstruction is found, enterostomy or enteroenterostomy is recommended.

No tumor mass of the gastrointestinal tract, considered at operation as malignant and inoperable, should be abandoned without first removing a small section for biopsy and without trying to remove it, if possible. This will prevent the fatal prognosis of carcinoma when the patient has granulomata.

The similarity in the chain symptoms, the characteristic findings at operation, and the ability to make a diagnosis on histological studies warrant considering infective granuloma as a definite disease entity. In the presence of a tumor mass within the abdomen, the possibility of an infected granuloma should always be taken into consideration in making a diagnosis.

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1749 Grand Concourse

THE ENDOCRINE SYSTEM IN RELATION TO THE EYE*

Pituitary Physique and Personality Corroborating Oculofacial Physiognomy

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The broad build of skull and face with wide spacing of eyes, mentioned in the previous article, is mirrored in body build. The neck is sturdy, the shoulders broad, the trunk massive, limbs strong, fingers usually short and stubby. The fat and hair supply is abundant and evenly distributed, the genitals and secondary sex characteristics, well developed. In the female of the (pituitary) species, or rather subspecies, these characteristics are accentuated. Hands and feet are small but plump, as are legs and thighs. Hips, mons veneris and nates are well padded and the breasts are—literally—exuberant.

A. J. Rongy and A. B. Tamis (*Transactions of American Association of Obstetrics,* 1940) have shown, quite recently, that the contour of the palate in females is a reliable index of pelvic capacity, a broad, well arched palate indicating a roomy pelvis. We may be able to add a line to the old quatrain, "Noscitur ex pede quantum sit virginis antrum. Noscitur e naso quanta sit hasta viri," to make it read "Noscitur ex palato quanta sit feminæ pelvis." And we note Freudian implications in the slang appellation "broad."

Add a wealth of dimples and we begin to realize that the popular pet name, "baby-doll" is verbally as well as biologically appropriate. The baby part is often indicated by a child's mentality which does not necessarily imply innocence. There is, in fact, a very decided eye to the main chance; something like the acquisitiveness, salesmanship, which we shall note in pituitary males, who are good mixers and gogetters, while the girls are golddiggers, cuties, and sweeties.

*Twentieth article in the series.

Returning to the mental and spiritual qualities connoted by the pituitary facies we find, first of all, a marked sexual endowment in the males and sex-appeal in the females. There is virility and energy in the males, marked feminity in the other sex. It is interesting to note that the wide-spaced eyes and the strong chin of the pituitary have been viewed as symbols of courage and energy since time out of mind. Classical sculpture, both Greek and Roman, show this unmistakably in such heads as that of the Capitoline Jove with its heavy and majestic brow, almost duplicated centuries later in the Moses of Michelangelo, and in that of the Ludovisi Ares (Mars). We shall see later on that this visage of virility and courage is, as one might expect, found in many military men, and in prize fighters, wrestlers and other heavy weight athletes. *Per contra,* too closely spaced eyes and a "weak" chin have always suggested a lack of courage and virile energy.

The Pituitary Type

A study of many hundreds of portraits of pituitary type individuals seems to bear out the implication that they are hearty eaters, drinkers, and lovers. These qualities have undoubtedly nosological repercussions in the form, notably of gout, apoplexy, and possibly hyperpiesia. As to professions and avocations of pituitary type individuals there is a great variety which at first sight might seem to make it impossible to attribute any one quality or capability to several groups, to say nothing of putting them all in the same aptitude category. Suffice it to mention that the groups include, to a large extent and primarily, business men, executives, technical managers, promoters, publicity men and advertising experts, engineers, architects, economic and financial authorities, bankers and brokers, less frequently dramatists, stage and screen stars, musicians, writers, sculptors, chess-players and statisticians.

What is the clue in this maze of vocations; what, the thin red line—or maybe lines—which lead to a recognition of qualities of mind and spirit which are at a premium in practically all of these apparently disparate and, so to speak, irreconcilable, categories? The question can, perhaps, be approached more easily from the other end, viz., a resumé and analysis of the qualities and tendencies generally found in association with the pituitary type. Virility and courage have already been noted and are, naturally, of use in many fields of human endeavor. The pituitary temperament is above all balanced, even, not given to heights of sanguine expectation or depths of depression and discouragement, to impractical flights of fancy. With this there goes concentration on the work in hand, tenacity of purpose, persistence in anything undertaken, and also the capacity for sustained, persistent long-range planning and effort. Much of this might be summed up in the modes of system, order, and methodical procedure, on the one hand, and as rhythm, coordination, timing, on the other, as applied to certain occupations. The former attributes would seem of prime importance in occupations requiring mental activity of a specialized sort, while the latter are, although by no means exclusively, requisite and evident in certain physical occupations, economic, athletic and avocational. From this observational angle we begin to see how such qualities are of value to those who wish to devote themselves to engineering and construction or the building trades in general (housing projects, park and golf course planning) to the planning and coordination which are required of the architect, the railroad or bridge builder.

Self-control as well as control of others, plans of ways and means, far in advance, at times, of any possibility of execution, all of which might be summed up as executive ability as required in such different organizations as the Army and Navy, and in any important business or industrial enterprise. The qualities of rhythm, timing, above mentioned, are associated with a sense of number, proportion, and form, and this will suggest, if it does not entirely explain, the pituitary type seen so uniformly in golfers, prize-fighters, and wrestlers; in chess players and bridge experts; finally, in economists, statisticians, and actuaries.

Female "pituitarians" are found among the debutantes, but the typical markings are found much more definitely among adult women in industry, business, more particularly in the vocations listed above. It is worth noting that the pituitary features become greatly accentuated with age, like all signs of endocrine dominance. They then not infrequently verge on the abnormal and are associated with the classical physiognomy of acromegaly and, at times, of myxedema.

The writer believes that the pituitary physiognomy which appears to be so usually and strikingly associated with personality characteristics of value in a number of definite social economic categories may be of real value as an additional factor and aid in vocational guidance. Of course, the choice of a profession or other gainful occupation is not always determined—more's the pity—by special aptitude. Environment, family, parental or pedagogic counsel, early associations, the example of successful careers, special opportunities, often decide the issue. It would be interesting to study the heredity factor in the transmission of conspicuous ability in a certain field from one to a second or even third generation. We might find diagnostic physiognomic markings in sires or grandfathers. Such a heritage has been noted especially in the fields of medicine and of music.

667 MADISON AVENUE

Diagnosis of Jaundice

J. Stuart McQuiston, Cedar Rapids (*Journal of the Iowa State Medical Society,* August 1942) says that the accurate diagnosis of a given case of jaundice is highly important, because the treatment is entirely medical in the hepatogenous group and surgical intervention is not only unnecessary but definitely detrimental. In the obstructive group the fine differentiation into calculous and malignant causes is interesting but not entirely essential, since both should have the benefit of exploration. An early diagnosis in jaundice is not necessary because these are not emergency cases, and what first appeared to be a logical impression may be changed by subsequent observation and changing laboratory reports. Since none of the laboratory aids is infallible too much emphasis should not be placed on one test or type of test, but an orderly balance of all the information available over a period of time should be used to form the clinical impression of a given case of jaundice. Because treatment is so dependent on the correct diagnosis, one can afford to sacrifice speed for accuracy.

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SOME NOTES ON PARATHYROID DYSFUNCTION

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New York, N. Y.

That the parathyroid bodies have important endocrine functions has been a comparatively late discovery. Although the glands themselves were described by Sandström in 1880 it was at least twenty years later that their total extirpation was recognized to be followed by striking symptoms.

Vasale and Generali at that time (1900) recorded the occurrence of tetany following such a removal. This tetany was found by two American physiologists, MacCallum and Voegtlin to be an accompaniment, if not a sequiter, of the lowering of the calcium level in the blood. Collip, fifteen years later, utilizing a parathyroid extract, aborted or cured this tetany reaction and completed the circle of proof.

In the earlier days of wholesale thyroid removal, a veritable surgical mania, such hypoparathyroid tetanies were alarmingly frequent since the parathyroids were sacrificed with the thyroids, but the dramatic nature of the tetanic reaction taught caution to most surgeons, even at the shrines of thyroid holocausts. While surgeons did not then operate in rubber boots nor fill baskets full of thyroids, as did some of their early day colleagues of ovarian snatching sadisms, still there was gory thyroid surgery.

In the younger days of the present writer's surgical tutelage he has seen such abattoir-like pictures in the surgical amphitheaters of certain hospitals of New York City, to mention no names. Ovaries removed by the bushel and had the surgeons at that time ferreted out or suspicioned some of the later findings in regard to the thyroid it is not improbable that this organ would have been mingled with the ovaries.

Everybody looked on to see "dementia praecox" cured by excision of the colon and at present it is not the sacrifice of this end of the body that is to do the trick, but certain misguided enthusiasts perforce must cut out one's brains to cure their malfunction. No one can deny that a leg amputation must bring about some compensatory activity, some may even learn to walk on their hands, but where are the handy brains to come from after a prefrontal lobectomy, for example? It may be that the brains before were acting badly—Dr. Tilney frequently called attention to man's neglect of his thinking apparatus—but certainly with "no brains at all", who, except a Rohrschach specialist, is able to properly assess the damage? The man with the amputated leg may use a wooden one, or a crutch, or a wheel chair, but where are these homologues to be found for the partly decapitated human being?

Because the lowly *Rana pipiens* could "jump" after having had his head cut off, what sense is there in destroying the most highly evolved structures in the animal kingdom to "pluck out the hidden sorrows" of Shakespeare's query? "Fifth column" activities are somewhere being met by shooting squads. We are not far from recommending such procedures for those who still conceive of the human brain as a piece of cheese to be mutilated at will because the results of such destruction are not as apparent as those of a leg amputation.

'Tis an old, old story which apparently has to be told over and over again, that man is a unitary structure and not a collection of loosely integrated organs that can be plucked apart and still *really* function. Hence the early mention of the "bushels of ovaries" removed, the baskets full of thyroids, etc., etc., etc.

But I wander from my chief issue, after recently examining one of these "artificial moron" productions.

In an older paper I narrated how I jumped or was startled with a jerking activity at a slight stimulus, and on partial analysis learned that forced breathing, speaking, and impulsive or compulsive activities fifth-columned the parathyroid functions and induced not only reversible physiological changes but even went on to produce irreversible somatic modifications named Paget's disease of the skull. After twenty years of observation I have found no appreciable flaw in the logic of the situation as then outlined and have learned enough to modify markedly the dysfunction, not by drugs, but by more orderly behavior. I no longer wish even to dispute with my colleagues some of the more palpable misconstructions put upon behavior. To quote an ancient seer—"Truth is the daughter of time and not of authority." The lesson has been partly if not thoroughly learned.

But, to our *moutons,* as the French might term it, that is, to a number of minor subtetanic and overloaded sensory responses as well. Inasmuch as many of these

are still herded with the "neuroses" the process of sorting becomes more and more important in spite of the intricacies. Not every one can at once get his blood calcium and phosphorus determined, even though from the economic side this is rendered easier by state subsidized laboratory workers. Then again even the blood determinations do not always check with the clinical signs. I, as a guinea pig, have been rich in clinical signs, but the blood chemistry has revealed little if anything at the time, apparently justifying the general skepticism of the internist then consulted. The sensory awareness, sometimes stopping just at the border of hallucinatory potentialities have been numerous. Interestingly enough, and perhaps of more than passing mention, the olfactory has not seemed to share in the general disarray in this particular guinea pig. It possibly is sublimated sufficiently by a gourmet's interest and pleasure in the finer delights culled from Escoffier —now made available in English dress.

When Thompson wrote his little book on *Browsing and Nibbling,* the closely related gustatory gratifications gave this guinea pig plenty of experimental opportunities. Whereas botanical identifications, à la Britton and Brown, were more technical and scientific, it nevertheless was a narcissistic delight to be able to name plants, especially by their taste. True, I never advanced to the point of classifying grasses and sedges by this method, but the "flowers of the field" became well known to me by simply nibbling a leaf, a twig, or a blossom.

The oral erotic component soon came under control by certain periodic essays in gustatory self-control—so well exemplified by the Church Fathers by the imposed 'fast' days and periods at lent and other specified times. I frequently went four to five days without eating anything. "Go way back and sit down" was the answer to the socalled "pangs of hunger". For the life of me it has been incomprehensible to note, in reading, how these "pangs of hunger" are made so much of in literature. Few individuals I have met fail to get "peckish" about noon time. I rarely found any finicky appetite regressions although at times reminded of a family joke which came out about the age of ten when enjoying—very much—some clam fritters, I passed my plate for a third helping. Mother, surprised, said, "Why Ely I thought you did not like clams". "Are these clams?" I answered. "I don't like clams", I semi-weepingly responded and that was the last of "I don't like" in the gustatory sphere, save that I have not yet made some of the cheeses—"Limburger", for example.

The anal-erotic component also lost some of its cathexis. I rarely was constipated and "Pluto" and "enemas" rarely were needed—although not stubbornly rejected. While tenacious of many ideas and beliefs, I do not, I hope, delude myself concerning my general beliefs. I passed through the not unusual adolescent "conversion" process—simultaneous with my adolescent falling in love. This had a more than usual tenacity for at twenty-eight I finally married the girl I fell in love with at sixteen. I outdid Rebecca in my faithfulness. If my memory has a somewhat similar tenacity Rebecca, I recall, stood out but nine years. If memory from certain aspects contains some of this oral retentive nature, that too was an asset, but a tricky one. I here repeat what I have elsewhere written concerning this. If my interest, i.e., object cathexis was strong, things stuck. Hence, even at twelve a girl and I spelled the like class school grade down at a spelling trial of the public schools and when, at about sixteen, my father brought me one night my chemistry book, I read it all night. At five in the morning the heavy metals stopped me, but that chemistry book I held *letter perfect* for ten years. I never had to look at it even later in medical school. Prof. Chandler's lectures were known in advance, even if he personally was an attractive lecturer. Later, with Prof. Spice at the Brooklyn Polytechnic, I was equally proficient, but he was a good teacher.

Alas mathematics was no such primrose path. Descriptive geometry with Prof. Kimball at the "Poly" was a romp, whereas analytical geometry with Prof. Sheldon was almost a flop. I think he let me get by from friendship as we frequently walked home together after school. He lived further east on the Park Slope. Calculus also belonged to this squeezing through process.

But when at the present writing it comes to the parathyroid's plutonic tendencies your guinea pig has not been so fortunate. Everyone knows the old joke about "Pluto" and "doing a very childish thing", but for the hypoparathyroid victim it is no joke. Bang goes the cannon and the "Ah's" respond universally. So it is with the hypoparathyroid intestinal maladjustment. Fortunately a stimulating, or providing vitamin D regime has partly mastered this annoyance. In working this out the hurdles of grafting manufacturers of vitamin specifics had first to be surmounted. Libel laws in the U. S. A. are so closely followed up by grafting lawyers it would be injudicious to mention any names, and so we pass to the clinical feature of a mild parathyroid deficiency still in the resolving.

Here the bladder urge stands out prominently and annoyingly. Whereas in younger days the bladder call was as well under control as that of the stomach, no such happy solution has been found even with plenty of vitamin D and others.

When for a time one hoped that pyridium would do the trick of allaying bladder urgencies, pyridium was swallowed with alacrity. Alas, all it did was to render one's shorts gory. Belladonna and codeine, at times, were much more valuable in controlling the bladder "hurry ups" that so frequently interrupted a quiet evening meal, or entertainment, card game, or motor ride, etc. Naturally the onset of wintry winds did little to alleviate this condition.

The codeine bladder control was mostly efficacious but it interfered with sleep, save in one particular, that is, it had an excellent regulating effect upon an auricular fibrillation which had been an extreme annoyance for some nineteen years.

As my number had been posted, i.e., twenty-one years being the limit of life expectancy with auricular fibrillation (see Parkinson & Campbell's study of two hundred cases of auricular fibrillation), this spectre is an ever present reminder of one's chances for survival. Whereas I never have expected to attain the ninety-three and ninety-six year life span of my grandmothers, I feel that there are many things I would like to accomplish before handing myself over to the Styxian boatman.

A major stunt, the seventh revision of the Jelliffe & White, is behind me, after a short period of interrup-

tion from the publishers, who for reasons stated, not enough E. E. G. material and too much parathyroid deficiency, a job finished in 1940 still is awaiting a final revision. Inasmuch as my faith in brass psychiatry is very tenuous, and even if it had all the values offered by our Boston colleagues, still the feeble "rush light", as Lennox himself has acknowledged, plays so infinitesimal a rôle in the general neurological picture, my annoyance at being held up by such a specious argument can be imagined.

And so one comes to the final summation so far as hypersensitivity is converned. This is principally registered in the skin sphere and oddly enough maximally located about the nares. This comes under control by a phenol ointment and so I go gayly forward to meet Charon and his cohorts and in the terms of a ditty re. the coon who hated this "gitten up", gitten up, worse than dirt—and who would like to lie in bed till the evenin sun was red—"When Gabriel blows his trump, startin sinners on the jump, I'll await the final dump" full of trust—and possibly like this same coon—"then I'll turn and yawn and groan—yawn and groan and tell that nigger coon, "you be durnéd".

64 West Fifty-Sixth Street

THE MECHANISM OF THE KENNY METHOD AND ITS CORRELATION WITH VITAMIN B THERAPY IN POLIOMYELITIS

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"When an individual points out unrecognized symptoms in a disease as old as infantile paralysis, that is *revealing!* When these are at variance with the commonly accepted textbook picture of the disease, that is *startling!* But, when the same individual also abandons the ordinary treatment of the disease and institutes measures contrary to years of orthodoxy, that is *revolutionary.*"

The foregoing is an excerpt from introductory remarks made prior to an address delivered by Sister Kenny at a local medical college during her recent visit to the Pacific Coast.

In brief the salient features of the Kenny method for the treatment of poliomyelitis are:

1. The recognition of a state of spasticity, or spasm, existing in the muscles opposing the flaccid and apparently paralyzed muscles during the acute and convalescent phases of the disease, resulting in painful contractures of the opposing muscles and corresponding stretching of the flaccid groups, thus producing alienation of the latter from the psychoneural control mechanism.

2. The effective application of moist heat in the form of fomentations or packs for the relief of pain and spasm.

3. The early adoption of a reëducative system of passive and active muscular movements calculated to correct the psychoneuromuscular dysfunction.

Under this simple régime, without the use of serums or splints, the results are found to be more satisfactory from the viewpoint of comfort of the patient, freedom from atrophy and deformity, and rapidity and extent of recovery, than under the heretofore conventional hospital treatment, thus minimizing the distressing residual effects of the disease.

Dr. Philip Lewin, orthopedic surgeon, Northwestern University Medical School, Chicago, in a recent address to his colleagues on the Kenny method is reported to have said: "American medical men demand scientific proof rather than clinical observation. At the moment they will have to be satisfied with the latter." There are, however, certain basic facts and principles, which, when correlated, seem to provide a clue to the mechanism involved in this novel method of treatment.

In the first place, the question arises as to the etiology of the muscle pain, soreness and spasm, which are so characteristic in poliomyelitis. A comparative study of other disease processes in which muscle pain is prominent seems to provide the answer. In cardiac angina, myocardial anoxia, resulting from restricted coronary blood flow, is generally regarded as the cause of pain; and myocardial spasm associated therewith may be the immediate cause of the usually fatal heart seizure. In Buerger's disease, involving arterial constriction in the lower extremities, a similar condition prevails—muscle pain and cramps, due to anoxia resulting from insufficient blood supply. In beriberi, muscle tenderness and cramps are pathognomonic signs. In the latter disease the basic etiological factor—vitamin B deficiency—brings about anoxia of the tissues generally, owing to the faulty oxygen uptake associated with the lack of thiamin which is so essential to carbohydrate metabolism. In the classic *in vitro* experiment of Kinnersley and Peters (1) the oxygen uptake of freshly prepared B_1 avitaminotic brain tissue was greatly improved by the addition of even a small crystal of thiamin.

There is a close parallel in the symptomatology and pathology of beriberi and poliomyelitis, as pointed out in previous papers (2, 3, 4) which is suggestive of a common etiological factor. The age, sex and seasonal incidence of both are also similar. Both diseases exhibit flaccid paralysis and atrophy of muscles most in use (usually the legs), with marked muscle pain and tenderness and muscle cramps or spasms. The pathological changes in the nervous system are much alike in both diseases, with chromatolysis, vacuolation, pyknosis, demyelination, neuronophagia, edema, lymphocytic infiltration and gliosis common to both. Similar clinical and pathological findings have also been reported in experimental anoxia, as in altitude aeronautics and in oxygen deprivation produced by inhalation of nitrous oxide, carbon monoxide, etc. Under such conditions Girault and Richard (5) have even reported a lymphatic pleocytosis and increase in protein content of the cerebrospinal fluid—characteristic findings in poliomyelitis. It is well known also that there is an increase in the lactic acid content of the tissues generally, and in the central nervous system in particular, in anoxic and vitamin B_1 deficiency states.

Gerard (6) has shown that the rate of tissue respiration in the cerebrospinal system is about thirty times that of other body tissues. Van Liere (7) states that "of all the tissues of the body nervous tissue is the least capable of withstanding oxygen want". Rosenbohm (8) has shown that an accumulation of 30 mg. of lactic acid per 100 grams of brain tissue can initiate nerve cell proteolysis. A correlation of these observations may provide a physiological explanation of the sequence of pathological changes common to beriberi, poliomyelitis and other degenerative diseases of the nervous system, and may account for the neurotropism of the diseases. The hypothesis of vitamin B deficiency as the common etiological factor in these diseases would not necessarily nullify the elaborate research work done on the experimental invasion of the virus, but would call for a revision of our interpretation of this hypothesis on the assumption that the virus may actually be of endogenous origin, a biochemical by-product of vitamin B deficiency, capable of reproducing a similar disease process by catalytic chemical action in the central nervous system of experimental animals. No conclusive experimental laboratory work has yet been done to exclude this possibility.

At any rate it would thus appear that anoxia, however produced, may be the basic cause of the muscle pain and spasm in poliomyelitis. The fact that these distressing symptoms are so promptly relieved by the continued application of heat, as in the Kenny method, is also suggestive of the mechanism involved. The increased blood flow to the affected parts, as a result of the vasodilatation caused by the heat, would improve neuromuscular oxygenation, thus tending to relieve the pain and spasm. With muscular pain and spasm eliminated the psychic inhibition to muscular movement is lifted, thus preparing the way for the reëducative exercises which play such an essential part in the Kenny program.

I have found that a similar and even more spectacular result may be obtained in both acute and convalescent cases of poliomyelitis by the parenteral, oral and dietary application of intensive vitamin B therapy, as reported in a previous paper (3). Brief clinical reports of cases in which an early trial was made of this therapy follow.[1]

Case Reports

CASE I.—In May, 1938, the first case of acute poliomyelitis of the season to be reported in the Toronto district, was that of an eighteen-year-old girl, who was treated by hypodermic injections of vitamin B_1, 5 mg. daily for ten days. The disease was ushered in with the usual headache, fever and stiff neck. Lumbar puncture revealed a pleocytosis of 300. With the second or third injection a marked amelioration of symptoms was noted, and the patient made such a rapid recovery that the attending physician was inclined to question his diagnosis.

CASE II.—In May, 1938, a nine-year-old boy, of Orillia, developed poliomyelitis. The spinal fluid cell count was 25 and 35 on two occasions, and paralysis had developed in both legs. Hypodermic injection of vitamin B_1 (10 mg.) was begun shortly after the paralysis was noted, and was continued daily for seven days. The patient made a rapid recovery with complete regression of paralysis within a month.

CASE III.—On October 15, 1938, a fourteen-year-old boy, in the Guelph district, developed acute poliomyelitis. The onset was with fever, headache, vomiting, sore throat, stiff neck, and pain in legs and arms. On October 18th paralysis developed in both legs, back and one arm. On October 20th the patient was brought to Guelph for treatment. Upon arrival he complained of pain in the ankles, hips and back, and was completely paralyzed in both legs and the right arm. Lumbar puncture at this time showed a cell count of 36, mostly lymphocytes, with globulin plus. Vitamin B therapy was immediately begun; 50 mg. of thiamin chloride hypodermically the first day, 20 mg. on each of the next three days, and 10 mg. on the fifth day. As a dietary supplement marmite (brewer's yeast extract) was given from the start, twelve grams daily. During the first day muscle pains were severe, codeine being required for control. On the third day the pains diminished, and on the fifth day disappeared completely. On the second day the legs were put up in light plaster splints, the arm being left free with instructions not to attempt movement. On November 2d the patient said his legs felt "different". The next day he said his arm felt better, and upon examination he was found to have recovered full muscle function. On November 6th the splints were removed, and it was found that he had recovered full use of his legs also. The following day the patient was discharged.

CASE IV.—On October 18, 1941, a diagnosis of poliomyelitis was made by a local pediatrician in the case of a six-year-old boy of Niagara Falls, Ontario. The onset was with fever, neck rigidity, muscle tenderness and paresis; and lumbar puncture revealed a definite pleocytosis. Intensive vitamin B therapy was begun on October 20th—40 mg. hypodermically daily. Within twenty-four hours muscle tenderness and rigidity were much improved, and within three days the patient seemed perfectly normal. The boy made a very rapid and complete recovery with no residual paralysis or paresis.

Comment

The rapid and complete recovery in all the patients in the cases reported above, associated with dramatic suppression of muscle pain, tenderness and rigidity, as in cases III and IV, following the administration of vitamin B_1, would seem to warrant a more general trial of this therapy. The use of vitamin B_1 provides a biochemical means of improving the tissue oxygenation, thus acting as an internal physiological corrective for the neuromuscular dysfunction; while the Kenny method acts as an external physical means to the same end, bringing about a similar result through improving the blood circulation in the affected parts. It would thus seem that the treatment of choice for this disease should be a combination of both methods.

Summary

1. The salient features of the Kenny method for the treatment of poliomyelitis are reviewed.

2. A comparative study of disease processes associated with muscle pain and spasm elicits the suggestion that the major benefits of the Kenny therapy hinge upon the correction of neuromuscular anoxia by means

[1]The author is indebted to the following physicians for their cooperation in making a clinical trial of vitamin B therapy and reporting their observations: Dr. Ralph Hargrave, Toronto; Dr. H. G. Berry, Orillia; Dr. Charles Pinch, Guelph, and Dr. Howard H. McGarry, Niagara Falls, Ontario.

of the improved blood circulation effected by the hot applications.

3. By a comparison of the symptomatology and pathology of beriberi, poliomyelitis, and other anoxic states, support is given to the author's hypothesis of vitamin B deficiency as the major etiological factor in poliomyelitis, thus accounting for the associated anoxia and neuromuscular dysfunction.

4. Case reports are submitted showing the striking effect of the early administration of vitamin B_1 for the relief of poliomyelitis symptoms; and a more general trial of this nutritional corrective in conjunction with the Kenny method is suggested.

NOTE: It may be of interest to the medical profession to know that the use of hot fomentations in the treatment of poliomyelitis is not original with Sister Kenny. A member of our profession, Dr. J. H. Kellogg, of Battle Creek, Mich., in his monograph, *Rational Hydrotherapy*, published by F. A. Davis Co., Philadelphia, in 1900, recommends the hot fomentation for the relief of muscular pains and cramps, and on page 810 (3rd edition) he specifically suggests its use in the treatment of acute anterior poliomyelitis.

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16 GOTHIC AVENUE

ALCOHOLISM AND ITS MANAGEMENT

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For many years alcoholics, with few exceptions, were thought to be hopeless. This feeling is so deep rooted that it usually receives the "hands off" policy. I do not wish to imply that there is hope for all alcoholics for one must concede that many are past correction. However, in carefully selected cases, alcoholics can be guided and helped to obtain the goal of all therapy—total abstinence—by objective, dispassionate and individual approach.

The term alcoholic as referred to here includes only the pathological drinker and definitely excludes the social drinker. The social drinker can handle his or her alcohol while the other is handled by alcohol, i.e., social drinking *per se* does not interfere with an individual's important life activities, in business, in the family or in the community. Problem drinkers, uncontrolled drinkers, dipsomaniacs and spree drinkers are all viewed as pathological drinkers. Those who have an abnormal response to the effects of alcohol refuse to recognize the danger of their drinking and, despite scientific studies to the contrary, alcohol still masquerades as a physical and mental stimulant. The deceptive appearance of stimulation arises from the release of the lower centers from the control of the higher by narcotization of the latter. As a result there is a partial escape from subjective burdens and their mental responses may be infantile or primitive.

Drinking to excess frequently occurs in actual mental disease. It may be a by-product of reactive depression or a depressive phase of paresis. Abnormal drinking may occur in the mental defective in whom the level of intelligence is greatly lowered. Alcoholic overindulgence is fairly common in the constitutional psychopathic inferior. These individuals are biologically deficient and, while they usually possess a charming personality, they are morally and intellectually delinquent, emotionally unstable, defective in judgment, deficient in ethics and wholly inadequate. This group is unable to cooperate as they are unable to pursue any well coordinated form of therapy and usually their exaggerated enthusiasm to accept a cure marks them indelibly as pathological liars. They are beyond any psychological re-education and reconstruction that would insure their rehabilitation and, unfortunately, must be confined to the human junk pile.

Why some people become alcoholics is a frequent query of relatives. Some are born with a hereditary predisposition to alcoholism just as one is born with a vulnerability to tuberculosis. Environment and experience may be added factors. Some believe they are allergic to alcohol as hay fever sufferers are to pollens. Only one note is common to all alcoholics and that is emotional immaturity. Closely related to this is an observation that an unusually large number of alcoholics start out early in life as an only child, as an only boy in a family of girls, or an only girl in a family of boys. Many have records of childhood precocity and were what is known as problem children. Frequently the situation is complicated by an off-centered home atmosphere in which one parent is unduly cruel and the other overindulgent. Any combination of these factors, plus a divorce or separation, tends to produce neurotic children who are poorly equipped emotionally to face the ordinary realities of adult life.

One man finds what he thinks is a pleasant escape while another may immerse himself in his business, working ten to fifteen hours a day or devote his energies to diversified sports. When, however, he diverts to alcohol it bolsters his opinion of himself and temporarily buoys any inferiority reactions. Usually light drinking leads to heavy drinking. He then smolders with resentment and indulges in infantile rationaliza-

tion to justify his drinking—he has been working hard and deserves relaxation, or his wife does not understand him and his nerves are becoming jittery. He unconsciously becomes "chief alibi maker" for himself. In the interval he may demonstrate that he can become a controlled drinker and shows his strength of will power by not taking a drop in weeks. He may make a point of visiting his favorite bar at a certain time each day and sip buttermilk or a soft drink, not realizing that he is indulging in a juvenile mental gymnastic. Falsely encouraged, he shifts to a routine of one beer a day and that is the beginning of the end. Beer leads inevitably to more beer and then to hard liquor and he slides to a first rate bender. The trigger which sets off the explosion is apt to be a stroke of business success or a run of bad luck. He can stand neither prosperity or adversity nor is he truly safe in the middle of the road. Coming out of this alcoholic fog he becomes a puzzled victim. After a time he no longer needs his rationalization to justify his first fatal drink. Then, after many experiences of this kind, he realizes that he does not understand himself and wonders whether his will power, though strong in other fields, is deficient against alcohol. At this critical period he may do a number of things: he may admit defeat and continue on and on until he develops an acute alcoholic psychosis and requires hospitalization; he may develop a period of reactive depression and attempt self-destruction; or he may seek outside help or his relatives may intervene at the critical moment.

There is a distinct group in which abnormal drinking is a symptom of only an inadequate personality, i.e., a surface expression of an underlying neurosis which usually is amenable to readjustment of conflicts and complexes. In this limited group, abnormal drinking may be explained as an escape mechanism from intolerable situations, environmental, domestic or vocational. When the initial conflict is uncovered, the underlying nervous disorder may be an anxiety state, neurasthenia or complusion neurosis. Their ego is satisfied and treatment will be faced with greater faith, confidence and determination. The abnormal drinker will become optimistic, face reality without alcohol and ultimately achieve an adequate adjustment.

The chief difference between the normal and the abnormal drinker is that the first man drinks in moderation, socially, in order to make reality more pleasurable, while the second drinks in order to escape from reality. The abnormal drinkers are predominately introverts. They are sensitive, self-analytical, the thinkers and planners of the world and extremely self-conscious. To them alcohol makes free and easy human contact which they seldom ever achieve without its aid. This is initially deceptive and gives them the cloak of an extrovert. The mental alibi then becomes wholly satisfactory through the medium of alcohol. This psychic masquerade permits greater socialization but is only a veneer covering of an inadequate personality. There is nothing abnormal in being an introvert provided he is well adjusted, or a extrovert if he is likewise, but the introvert who consciously drinks to extrovert himself becomes an abnormal drinker.

When insight into the patient's problem is gained, his frustration is neutralized against opposing desires and demands and he now realizes the fact that misuse of alcohol is a symptom of maladjustment. Because his symptoms happened to take the form of chronic alcoholism, there was little incentive for him to seek any other path of escape. In due course of time, all abnormal drinkers may sooner or later show signs of a paranoid nature, suspicions, jealousy or ideas of persecution. When chronic alcoholism persists over many years, structural alterations in the ganglion cells of the brain may occur and, as a result, coarse tremors of the lips, tongue and extended hands, together with slurring of speech and beginning cerebral deterioration, may produce a condition of pseudo-paresis.

Usually there is found one or more of the following apparent reasons for excessive drinking: (a) An escape from life situations which he cannot face. (b) Social drinking which has become pathological drinking. (c) Evidence of maladjusted personality (including sexual maladjustments). (d) A symptom of psychosis such as a depressive or schizophrenic reaction. (e) The means of relieving incurable physical pain. (f) The manifestation of constitutional inferiority such as a psychopathic personality. He usually presents the behavior of an individual who drinks because he likes alcohol and knows he cannot handle it but does not care.

Alcoholism is a form of drug addiction and the alcohol may be taken because of internal emotional unrest. The addiction to alcohol is determined by the internal drive and not by the simple taking of alcohol. Treatment, therefore, consists of removing alcohol or attempting to make alcohol in itself distasteful. Damage to the brain, such as follows trauma to the skull, tends to lower the tolerance of alcohol so that those who were able to consume large amounts of whiskey before the accident, usually cannot consume more than a very small amount after it. Tolerance to alcohol can be built up by repeated use of the drug. On the other hand, if one is psychologically prepared, for example, if he wishes to enter enthusiastically into the spirit of the occasion in which he is but "cannot let himself go", then intoxication may be quick and require little alcohol. However, should the group be irritating or the person concerned over some problem which he is desirious of solving, then many more drinks are required to produce intoxication. Similarly, when one is in a depressive mood alcohol will have relatively little effect.

The fluctuations of the emotional content occur within a relatively small range in the average person. Rarely do normal persons swing so "high" that they become euphoric nor, on the other hand, seldom do they swing so "low" as to develop persistent suicidal thoughts. These extreme swings of mood do occur frequently in psychopathic personalities and in manic depressive psychosis. Between the pole of average variations in mood and the pole of pathological swings fall the many persons who in common parlance are said to be "subject to moods". When a person is "high" as the result of a spontaneous swing in his base line, stresses and irritating news have comparatively little power to depress him. He is able to do everything in his stride and is unimproved and unaffected by any other than the most acutely disturbing events. Conversely, when a person is low he will become depressed over some minor difficulty which ordinarily he would disregard and even unusually good fortune will be so disconnected that only momentarily does it raise the level

of depression. In unstable persons, the level of swings fluctuate widely from exaltation to depression, from scintillating wit to mental dullness, and from great activity to sluggishness.

During alcoholism there is often an intense desire for sex contact and on many occasions, especially in chronic alcoholics, there is a relative inability to have an erection. The combination of the increased desire due to decreased inhibitions and impotence often leads to projection mechanism wherein the alcoholic says, as it were, "it is not my fault, it is your fault", and then accuses the wife of infidelity.

Varying pressure from parental insistence and threats of divorce action by wives may result in an involuntary admission to the hospital. They may be brought in by force by relatives, physicians or attendants and often by deception, or are drugged by the intravenous method to facilitate their entrance. With these intoxicated, unwilling patients it is our policy to give immediate medical care directed toward whatever physical condition is found, together with the immediate withdrawal of all alcohol. The psychiatric struggle begins when such a patient recovers his mental equilibrium. His typical reactions are anger at incarceration, a demand for freedom and privileges, protestation that he has now learned his lesson and forever will discard alcohol. He should be instantly informed that the goal is total abstinence and all concerned must recognize that an individual who has been a pathological drinker can never be a social drinker. His need for rest and study in a controlled and restricted environment should then be explained to him, and he should be told that the obtaining of modified freedom depends upon his future behavior and cooperation. As a result there is usually a period of "beating against the bars" which may last from a few hours to many weeks, but however long it lasts the same consistent attitude is maintained toward him. During this interval he is allowed no visits from friends or relatives.

An alcoholic addict with his own independent financial resources seldom seeks treatment on his own initiative. If he does, which is rare, he is told frankly of the restrictions imposed and that treatment usually requires several months. If he decides to enter, knowing such factors in advance, the outlook is better, because half of the battle is won if there is a sincere desire to cooperate.

Methods of Treatment

There is, perhaps, no other condition in which so much confusion exists regarding methods of treatment as chronic alcoholism, so much interference by relatives, and so many cases of relapse after treatment is once instituted. There is also more pessimism with regard to this condition among those who attempt the treatment of unselected cases than with regard to any psychiatric state. The management is difficult no matter what the social or financial status happens to be. When one is becoming submerged and gradually reaching the stage of saturation, such inebriated individual may be divided into three components: one part himself as he really is, one part representing what he expects to be, and a third part what he wishes to behold. A man of this type usually has what he considers a good reason and a real reason—self-justification. A person who has been an excessive drinker can never be a moderate, controlled, or a one or two cocktail drinker.

A considerable number of patients who finally consent to treatment, particularly those who come under pressure, desire a "rapid, sure cure" on the plea that they have lost so much valuable time from business or work. They readily embrace "Keeley cures", religious retreats, and other bizarre methods. Recently another rapid fire treatment has come into vogue which is termed the conditioned reflex treatment, based on the old empirical method of apomorphine injection to cause the individual distressing nausea and vomiting so that alcohol becomes terrifically obnoxious. Emetine is substituted in this method while the individual is permitted to consume his alcohol which results in a physical and psychological aversion to the sight, taste and smell of liquor. The initial treatment covers a week, to be followed by weekly reenforcement for several weeks or several months. It is quite apparent that this procedure fails to evaluate all criteria and does not uncover the precipitating and constitutional basic values. Such approach minimizes the seriousness of the disorder and does not consider the psychosomatic features. This is a form of generalized treatment, whereas a comprehensive evaluation is required based on an individualized study of the entire picture so as to include the structural and psychic background.

The method of treatment to be adopted depends on the type of chronic alcoholic with which one is dealing and partly on the stage at which the patient comes for treatment. Careful investigation from a physical and psychiatric viewpoint is an essential preliminary. Where alcohol is found to be a symptom of some disease, mental or physical, such as paresis or a recurrent manic depressive psychosis, the treatment is that of the underlying disease. When the alcoholic factor itself is in the forefront, the chief line of attack is a thorough investigation of the phases of the patient's life and personality. Usually the first step that should be insisted on is that the patient place himself in a nursing home or in a hospital where he can be adequately supervised. This, of course, is usually what the patient refuses to do, but with the exercise of tact and patience it is often possible, in the early stages, to secure his cooperation.

In our experience, the psychological viewpoint is usually a revelation to the patient and the physician who places it before him is at once at an advantage, as the patient has heard it being expressed by his friends that his condition is simply one of moral turpitude and nearly always he has personally come to regard his alcoholism as mysterious and inevitable. The patient's good will having been gradually obtained in this way it is usually possible to show him the factors, psychological and circumstantial, which have contributed to his illness and to show him how to deal with them in a more satisfactory manner. Advice as to the conduct of his life in the future helps to restore his self-confidence, which in the early stages of alcoholism has often been submerged. Complete abstinence should be insisted upon as proof of his honesty of purpose and the patient has usually to be instructed that it is not unmanly to be abstinent. This must be maintained as the only treatment which can be effective in all cases, is one which can be regulated to the patient's

individual needs, and includes those measures which combine personality analysis and adjustment with training of healthier habits over a long period of time and under strict supervision.

The mate of the patient is interviewed many times, for the attitude toward drinking of a wife or husband is extremely important. Their tact and diplomacy in handling past and present situations and episodes, together with their intelligent cooperation in the planning of new activities, are major therapeutic aids. One cannot stress too much the significance of the mate's attitude and cooperation. Many a poor result of treatment is due to the absence of any insight whatever in the wife or husband.

During the early months of treatment, the patient uses the physician as a support, rather than the alcohol which he has previously utilized. Throughout the treatment there is established a close personal relationship between the patient and the doctor. In this way the latter develops a definite knowledge of how the patient "clicks" and the patient derives confidence and helpfulness in realizing the physician's understanding of his own particular problem. When an honest desire for help is demonstrated, he should be approached with sympathy and kindness that eliminates all ideas of punishment, fears of failure, and attitudes of inferiority. Patient and physician should meet each other half way with frankness and mutual expectation of confidence. Tact, diplomacy and implicit interest in presenting the liabilities of his make-up are extremely important.

In addition, the physical status of each individual must receive corresponding consideration. As the abnormal drinker becomes converted, the fasting blood sugar shows a low grade tolerance curve but usually does not reach the level of a true hypoglycemia. The reaction of deficiency of low blood sugar may manifest itself by anxiety, tenseness, mild depression and apathy. This can be corrected by the Pitfield treatment, five to ten units of insulin, three times a day, instead of sedation by bromides and the barbiturates. Rapid detoxication and elimination can be properly controlled by colonic irrigation. Associated neurotic phenomena may develop because of decreased appetite and food intake and poor assimilation of food. The toxic action of the nerve fibers can be corrected by the intravenous injection of fifty milligrams of thiamin chloride once daily and one hundred milligrams of nicotinic acid three times a day. The administration of dilute hydrochloric acid is distinctly helpful; also vitamin C to be supplied by adequate amounts of fresh fruit juices and green vegetables. Vitamins A and D are obtained chiefly through animal fats, so a sufficient supply of milk, butter, cream, cheese, meat and eggs will afford an overabundance of the important vitamins. Some of the vitamin concentrates such as haliver oil and viosterol may be helpful in speeding up physical rehabilitation.

The early recognition of delirium tremens is most important. The chief prodromal symptoms are great restlessness, insomnia and intense apprehension. The patient is annoyed at the least sound and there is profuse perspiration. He has terrific nightmares, which pass into typical delirium during which hallucinations, both auditory and visual, make their appearance. He is disorientated, incoherent and shows marked distractibility. Misidentification is striking—total strangers being recognized as intimate friends. Physically there is generalized tremor, coarse in type, affecting chiefly the fingers, facial muscles and tongue. The temperature is slightly raised, the pulse is accelerated, the tongue is coated and the breath is foul. Albuminuria occurs in fifty percent of the cases and epileptiform convulsions may occur. The pupils are often dilated and react sluggishly to light; Argyll Robertson pupil may be present and tendon reflexes may be diminished or absent.

The pathology of this condition is punctiform brain hemorrhages and degeneration of the ganglion cells. Some observers believe these processes are the result of avitaminosis, but the toxic action of alcohol cannot be under estimated. This condition should be managed as follows: 1, hospitalization; 2, maintain patient's strength; 3, alleviate excitement; 4, procure sleep by sedation; 5, promote elimination; 6, daily lumbar tap; 7, intravenous injection of thiamin chloride; 8, nicotinic acid; 9, gastric lavage for gastritis; 10, small quantities of liquid then semi-solid diet; 11, insulin in small doses; 12, daily warm baths.

Summary

Alcoholism is an immense social problem and usually a long progressive disorder. It accounts for seventy-five percent of all crimes and a great proportion of mental disorders, suicide, death, poverty, sexual excess, venereal disease and dissolution of families. It is generally agreed that alcohol acts as a narcotic and not as a stimulant. From the outset it acts as a direct toxic agent on the central nervous system when taken in excess. The deceptive appearance of stimulation is due to release of the lower nervous centers from the higher nervous centers. Alcohol can be utilized as a food in small doses but when taken alone, in unusual quantities, it tends to paralyze the central nervous system and thereby reduces mental and muscular efficiency. As a rule, when a large intake is abruptly terminated sedatives are often necessary for at least a short time to relieve tremors and the accompanying jittery feeling that results.

Three types of abnormal drinkers can be recognized:

1. True dipsomania, on the basis of constitutional psychopathic inferior or mental deficiency.

2. Symptomatic dipsomnia, the outcome of episodic mental disturbances usually seen in manic depressive psychosis, reactive depression, general paresis and psychoneurotic reaction.

3. Pseudo-dipsomania, occasional or incidental bouts, occurring in between long intervals and without causing disturbance in the psychological or physical make-up.

Men drink because alcohol changes the psyche. They drink for exhilaration, to celebrate, to mark an epoch, to cement relationship as well as to get freedom from emotional stress. This type of social drinking serves its proper need in society. Where alcohol excess is found to be a symptom of an underlying physical or mental disease, treatment should be directed to the primary disorder. The first step should be the placing of the patient in a nursing home where he can be adequately supervised. Complete abstinence should be a prerequisite before any form of treatment is instituted.

Treatment should consist of a comprehensive re-

educational program, including psychological and psychotherapeutic approach and a complete physical survey. To afford the patient a fresh start in life, measures should be directed toward his physical and spiritual rebirth. The alcoholic victim feels himself inferior, humiliated and adversely considered by his fellow men. He thinks that he is held in contempt, pity or scorn, and so he builds up habits of isolation and retreats of various types and seeks escape in either alcohol or drugs. Treatment must be individualized, depending upon the most suitable approach. The philosophy to employ is to be strong with the weak, kind and sympathetic to the unfortunate. The end results of alcoholism are economic destruction, self-annihilation and spiritual degradation.

Oft times the damage is construed to be mainly the result of an avitaminosis because usually patients partake of little, if any, food while they indulge freely in alcohol. Very little stress, therefore, is laid upon the direct action of alcohol on the central nervous system. As a result, patients are improperly advised to take thiamin chloride while consuming alcohol to excess. This does not take into account the direct toxic action on nervous tissue and stresses mainly the vitamin deficiency.

One should not despair in all cases of alcoholism and admit defeat by standing by as certain selected groups offer vast possibilities. The task is usually difficult and prolonged but we must be always ready to extend a helping hand. The paramount factor to remember in accomplishing a satisfactory clinical result in every suitable case is to declare a "state of emergency" and place your patient in an "oasis—in the desert isle" and with proper guidance you will, in a great measure, contribute in the rehabilitation of a worthy individual. Men who attempt to drown out sorrow by alcohol merely give themselves a mental irrigation. In the final analysis, problems cannot be solved by the "cup that cheers" as it only means a future combat with destiny.

250 South Thirteenth Street

CHANGING CHARACTER THROUGH CORRECTIVE SURGERY

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Although the favorable influence of successful corrective operations on the psychic setup of patients has been emphasized by J. Joseph, and many other authors have also shown the importance of this matter, corrective surgery is still considered by the public as merely a means of satisfying the patient's vanity, the eventual change in his personality being regarded merely as a haphazard byproduct of the operation. The purpose of this article is to clear up the problem, and to call the attention of physicians to corrective surgery as a powerful aid in many psychiatric cases.

A quarter of a century ago, Frigyes Karinthy, the great Hungarian philosopher and wit, wrote an "experimental play" (this is his own description of it), entitled "Tomorrow Morning." His hero was an inventor, a genius, whose newest invention, the robot-airplane-bomber, was meant to revolutionize war strategy. (Are not poets prophets?) Karinthy depicted his hero as a hunchback, and, because of this physical defect, a shy, timid man, even a coward. He was doomed to perish—having already decided to commit suicide and to destroy his bomber—when as a *deus ex machina* a surgeon appeared, who relieved him of his fears and changed the cowardly, frustrated hunchback into a real hero, a happy man, simply by an operation severing those association paths of the brain which cause fear sensations. (Poets are really prophets!)

Twenty years later, the dream of this writer became a reality. Following Moniz's suggestion, surgeons, at first in Europe, then Freeman and others in the United States, started to operate on psychiatric patients, whose abnormal psychic set-up manifested itself in unfounded fears, depressions, and abnormal reactions to the ordinary events of life. And these modern "Dr. Morros" were successful in treating their patients by the very same procedure that Karinthy described, i.e., by severing the association fibres connecting the frontal lobe of the brain with the thalamus.

But however successful these operations are, in many cases they must be regarded only as palliative interventions. Just as the blocking of a ganglion relieves the pain caused by a tumor without healing the disease itself, so the psychosurgical treatment quite often does not eliminate the factors that cause these mental aberrations. Of course, this fact does not diminish the merit of psychosurgery, for it does reach its goal; which is to alter the personality of the patients favorably.

A further development in influencing a person's psychic set-up would be to improve the psychiatric-diagnostic methods to such an extent that physicians would be able to define the causative factors of every mental aberration, and treat not only the consequences but also eliminate the causes.

Such a causative treatment is represented by corrective surgery in certain cases of mental changes.

It might seem somewhat far-fetched to consider a psychic condition in the light of something simple enough to be modified or sublimated by merely modifying or beautifying physical appearance. But experience has proved that there really are psychic alterations caused by disfigurements of the body; that there really is just such a close connection between the external and the internal man.

This interaction between the physical and the psychic is not a new discovery. The saying "a sound mind in a sound body" has come down to us from the old Greek gymnasia as the most classically concise statement of such interaction. And it is probable this saving is but a modified version of a more ancient one which ran: "A beautiful soul in a handsome body." For proof that this older version may really have existed and was the first and original statement of interaction, I should like to point out the fact that there has been no saga, no religion, no collection of folk or fairy tales wherein beauty and kindness were divorced from one another, or wherein ugliness and wickedness were not

personified by the same villain. The fairy tales of our childhood were peopled with just such good and beautiful fairies and ugly and evil witches. This certainly cannot be called an individual fabrication. It is a conclusion drawn by the intuition of the human race, confirmed by observation throughout thousands of generations, and finally judged indisputable by the court of courts: science.

If we wish to analyze this interactionism, we really have two problems to face. First, we must examine the extent to which mental disposition can influence the physical development of the body, and then we must examine the extent of the changes in mental disposition which can be produced by physical modifications. The first problem lies within the realm of embryology and pedagogy; the second is the problem which we shall treat here, and which is closely connected with corrective surgery.

The above mentioned branch of embryology is the black sheep of medical science. Those who occupy themselves with embryology are content with an investigation of circumstances and the description of the events which take place during fertilization, gestation, and the subsequent development of the anthropological being: homo sapiens. But the manner in which the small suckling human animal develops into a living, feeling, self-conscious human being, the crown of creation, whom God created after his own image, and who, according to Voltaire, created his God after his own image, is here of secondary importance.

The research work done previously in connection with this question has been confined to a study of the results of this procedure. It was fashionable in the eighteenth century to determine mental disposition from physical appearance. It remained for Lavater to try to turn this game into a science. He drew thousands of faces, observed thousands of characters, and tried to establish basic relationships, using his observations as a means, between the characteristics of the face and the psyche.

But this science of physiognomics was no real science after all; for although it stated certain different facts, actually it only gathered data and did not explain causal connections.

The century that has passed since Lavater's time has not brought us much closer to the solution of this problem. We do know now, however, that the configuration of facial bones and mimical muscles determines the build of the face and that the mimical muscles themselves may influence the formation of bones. The action of these muscles consists chiefly of reflexes which may or may not be stimulated by external impulses. Winking, for instance, is a defensive reflex of the eyelid muscles, caused by external stimuli. Most of the stimuli acting on the mimical muscles, however, are internal. Every motion of the soul—gaiety, sorrow, annoyance, good will, ill will—all result in the contraction of a corresponding muscle or muscular group, and are so reflected in the face. The most frequent state of mind, by way of these reflexes, produces an overdevelopment of the corresponding muscular group. Thus the face comes to reflect that state of mind, even though the face be in complete repose.

In determining the beauty of a face our judgment is guided chiefly by the pleasantness or unpleasantness of the impression the face creates in our mind. A pleasant impression is most often created by a face which reflects a kind disposition. Modern education has already recognized this fact, for besides teaching gymnastics of the trunk and limbs, it has begun making use of exercises for the facial muscles. This is called physiogymnastics. Although the general public knows little about physiogymnastics, one exercise has achieved wide popularity. It originated here in the United States and is known as "keep smiling." This consists of deliberately exercising from earliest childhood those facial muscles which create a sunny, smiling, good natured expression. Since the expression thus created is a pleasant one, society is inclined to consider it beautiful. Nor does the effect of the exercise stop there. For beautiful people are generally well received by society and this acceptance in its turn produces favorable alterations in the mind of such people.

But here we reach the second part of our problem: the examination of the extent to which physical appearance may influence psychic life. We cannot here consider Lombroso's theory that mental disposition is predetermined by the form of the skull. Lombroso contends that a person, under a given set of circumstances, will become a criminal, whereas another person under the same circumstances, cannot become a criminal because of the difference in the formation of his skull. Lombroso's doctrine is right insofar as the shape of the skull does depend on the development of the brain, and the development of the brain is influenced by the shape of the skull. We cannot possibly control such development. But we can control certain abnormal alterations in psychic make-up, if the cause of these aberrations is a bad physical appearance.

These psychic aberrations can be divided into two groups, active and passive. It is with reluctance, perhaps even with horror, that society receives persons with defective physical appearance. In reaction to this reception the afflicted person becomes antisocial, and the active type of psychic reflex is born. However, the majority of cases belong to the passive type: cases wherein exaggerated bashfulness and complete suppression of the natural yearning for companionship are the results of a defective appearance. Quite frequently even a mental disease, melancholia, may be added to the physical shortcomings.

Though treatment of mental defects is the task of psychiatry and the psychoanalyst, the supreme cure for psychical defects caused by bad apppearance lies within the realm of the correcting surgeon.

There has been little opportunity for the treatment of the active type of psychic reflex by corrective surgery. But it certainly seems likely and even natural that if the securing of a position in society is hindered by bad appearance, and that if this hindrance in turn induces the person involved, because of his instinct for self-preservation, to commit antisocial actions, a corrective operation might create immediate results. For as soon as the reasons which exclude the person from society are removed, the necessity for criminal action is removed as well. However, if social rebuff not only causes a tendency toward antisocial action, but also creates an antisocial disposition such as hatred of humanity, any immediate result of the operation cannot be expected, and considerable time must elapse before the psychical condition will be favorably reorganized.

There has been, however, the opportunity to ob-

serve some quite surprising results after the operation of those included in the passive group; that is, those suffering from repressions due to defective appearance. They may be very excellent people, possessing the most enviable qualities, but they have failed to assert themselves because of their inhibitions. Everyone feels sorry for them, but few will accept their society. They will always be subject to suppression and ridicule. They come to the surgeon's office filled with shame and fear, afraid that their desire to improve their appearance will be considered senseless vanity. Sometimes it is only a slight defect that produces such an unfortunate state of mind; a badly proportioned or somewhat projecting ear; an overlong, humped or crooked nose; a flabbiness of the face—all deformities the elimination of which is no longer a problem.

Corrective operations perform miracles with these people. Their timidity and their repressions disappear; the pariahs of life become its epicures, and living proof that the work of the correcting surgeon is worthy of the medical profession, and that corrective surgery is an important, new and flowering branch on the great tree of surgery.

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THE PUBLIC HEALTH SIGNIFICANCE OF MENTAL HYGIENE PROBLEMS APPEARING IN CRIMINAL AND TRAFFIC COURTS*

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In spite of the fact that mental hygiene is rightfully one of the aspects of public health, little has been done in this field by organized health departments. It is true that the United States Public Health Service, through its Mental Hygiene Division, has been actively aiding the various states in a program to establish mental hygiene divisions in such states where they might be wanted, but the various aspects of mental health have devolved to a large degree upon private organizations for their administration and development.

The public health training centers do offer courses in mental hygiene, but these courses are not all-inclusive and make no distinction between mental hygiene as a rather vague academic subject which relates perhaps more to the teacher than it does to the physician, and preventive psychiatry. It seems to me that the decision of who shall administer public health activities in the state or in the community, whether health officer or state chemist, is largely an academic question provided that the administrator is well equipped by training, experience and attitude to do a good job. Many administrators in the mental hygiene field are not well equipped. A physician graduating from medical school is not a qualified medicopsychiatric administrator. Even if he learns medical administration while working in a hospital or in an institution or by having an executive job of some sort, he cannot go further without a course in psychiatry.

If a man is properly trained as a psychiatrist it is doubtful if he has had good executive training, so, all in all, the number of persons who have had training both in the executive field, which means public health training, and in psychiatry must be very small.

There is a vicious circle in this situation. Because there are no openings for such people none enter our public health schools for training. Mental hygiene administrators grow up like Topsy, through medicine and psychiatry, into some casual administrative job which they obtain through political connections, through seniority, or because they have demonstrated a capacity for work in subordinate jobs.

The number of spheres where psychiatry and public health cross are very few. In public health education, little demonstrating is done in the field of mental hygiene. This is left, as a general rule, to mental hygiene committees and societies in those states where such exist. In other states where there happens to be a progressive mental hospital administrator some educational work is also being done. Very occasionally—I do not remember a case in the past several years—hospitals with out-patient divisions doing some psychiatric work may do some public health education in the field of mental hygiene, and, to some extent, in preventive psychiatry.

There are places where an advanced attitude toward the work of both health departments and state hospitals might cause a correlation, an agreement of aims without a duplication of work, which procedures would be developed by state or municipal health departments and be worked out and demonstrated by the local insane hospitals, or perhaps by a mental hygiene clinic.

A few cities have court clinics. These are mental hygiene clinics in the purest form but with a very small and limited type of clientele; namely, those who have passed through the courts because of law violations. In the simplest form the interrelationship of public health and psychiatry can be shown by the enforcement of public health ordinances and the reference of violators of the public health laws through the court clinics for correction and treatment.

Work of the Psychopathic Clinic

The Psychopathic Clinic of the Recorder's Court of the City of Detroit has been carrying on this work for many years. I might say a few brief words as to its set-up although this has been described adequately elsewhere. (1, 2, 3, 4.)

The clinic is the *alter ego* of the judge. After the individual who has committed either a misdemeanor or a felony has been found guilty, it devolves upon the judge to pass sentence upon him. The progress of social work and social attitudes toward crime makes the sentencing of an individual not as simple as it used to be. Indeed, judges complain that it is a nerve-racking experience; and in order properly to decide what type of individual is being dealt with the court must have a study made of that person. He must be diagnosed and the sentence really takes the form of treatment.

*From the Psychopathic Clinic of Recorder's Court, Detroit, Public Health Series, No. 1.
Presented at the seventieth annual meeting of the American Public Health Association, Atlantic City, N. J., October 14, 1941.

The diagnosis in our clinic, and in most clinics like ours, is made by a team of specialists who know the physique, the environment, the personality type and other traits of the individual (5, 6, 7, 8.) Technical titles of such personnel are: the physician, who does the physical examination; the sociologist who makes an evaluation of the environment; psychologists, who test and take histories and evaluate the personality; and the psychiatrist, who utilizes the results of all the other students of a given patient, synthesizes them and adds to them the results of his own examination to determine the mental make-up of the offender.

The psychiatrist then submits to the judge, in our case, a written report in which the findings of each of the special fields are delineated. At the end of such report there is at least a paragraph in which a suggestion is made on how to keep the offender from committing further crimes either by treatment or by segregation. Treatment (9) consists of any procedure, from ignoring the offense because the man would react unfavorably to any further lectures or other minor treatment, to life imprisonment in order to protect society permanently.

Besides being a psychiatric clinic, this clinic is also a simple public health clinic. Sick persons coming through the clinic are dealt with in the same way that they would be if they went through a hospital clinic. If contagion is found, and this happens not infrequently in the case of venereally infected persons, provision is made for immediate treatment and quarantine. If an ailment is found which requires correction in order to prevent morbidity or mortality, the patient is referred to a hospital or to his family physician for treatment and, usually, if he is put on probation, it is part of the probation for the supervisor to see that the physician's recommendations with regard to maintaining the patient's physical health are carried out.

In addition to the work which is done directly upon the patient with regard to his physical condition, the branch of our clinic which deals with ordinance violations has a direct connection with the public health administrator. It must not be forgotten that in innumerable individuals arrested for violation of the health acts, the mental deviation can extend over as wide a range as the health ordinances cover types of offenses.

For example, we have examined a woman and her daughter, operating a restaurant, who were known typhoid carriers and refused to stop their work. They were arrested for violating the public health ordinance and working with food without a food handler's card. By the time that we saw them they had been arrested twice previously and had been fined. They were using assumed names and when the public health inspector came to the place where they were working he recognized them and arrested them again. I do not know how much disease was spread by them, but we do know that at least one case was reported during their earlier employment and that is how they happened to be recognized as carriers. The clinic found that these people were feebleminded and made provisions to aid them in getting work in some line other than food-handling, although they claimed that was all they were fitted for. Beyond the fact that neither they nor their lawyer could see why they should not be permitted to work with food and could not believe that people as healthy as they could be transmitting disease to others, there was nothing wrong with them characterologically or morally; it was purely an intellectual defect.

We have had innumerable cases of individuals living in houses which had been condemned by the Health Department who were living under extremely unsanitary conditions. The majority of these were persons who were impoverished or who were suffering from some mental disorder which caused deterioration but no bizarre symptoms. If an individual has such bizarre symptoms that he hears voices, is assaultive, spies in windows, or does other acts which attract attention, he is rather quickly gathered to the bosom of the Probate Court and then passed on to an appropriate institution which will detain him until such time as he might recover, if ever.

Some poor, old deteriorated dementia praecox subjects, who are nothing but a little bit silly and are unable to work, live in hovels with the most primitive sanitary conveniences. Often they live far enough away from other habitations so that they do not in themselves jeopardize the health of others. Unfortunately, some of them live in neighborhoods where, because the odor emanating from their habitations is offensive, or because they themselves are so unclean and so obviously germ laden that the neighbors demand that something be done.

One particular individual who passed through the clinic was living in a one-room house without toilet facilities or running water, had living with him some sixteen dogs, and when he had picked up enough scraps from garbage pails to feed the dogs there was little left for himself. We examined him and it was necessary for us to open the window and keep him as far away from our desks as possible. He was an old, deteriorated case of dementia praecox who was harmless, if one ignores this filthy condition, but, unable to take care of himself, he settled down in his hovel to make the best of life as he could live it.

In another instance we had brought to us a man who had violated the building code. He was found to be suffering from senile dementia. Through the work of the Clinic, a guardian was appointed who brought the tenement houses that he owned to a state where they at least violated no ordinances.

Numbers of complaints have brought patients to the clinic because of the improper handling of their garbage, or other organic matter which needs special disposition for health maintenance. Sometimes these people were merely problem individuals and sometimes there was an element of revenge where they wished to make trouble for their neighbors. Other times their social conduct was a simple reaction to a mental disorder.

The treatment of these cases, of course, depends upon the cause, which must be removed if possible; the attitude of the patient, whether he can be subjected to psychiatric treatment, or whether he will respond to disciplinary treatment within the possibilities allowed by law. Strict discipline, for instance, is almost impossible to carry out and seldom necessary in dealing with an ordinance violation. It is much better to place such offenders on probation with a certain amount of supervision and the exertion of po-

lice pressure wherever possible to make them clean up the situation. If the man is feebleminded or insane, hospitalization or institutionalization in an institution for the feebleminded is usually necessary. The Clinic supervises such commitment but does not actually commit except when a felony has been committed. In this case the Director of the Psychopathic Clinic and a commission of psychiatrists testify before the judge relative to the mental condition of the offender and he is committed directly by the Recorder's Court judge.

There are two other aspects which must be considered in thinking of the court clinic as a public health agency. The first is the Clinic's work as a criminological agency and the second is its traffic therapy. With reference to the criminological side of the Clinic's activities, we find that there are three important aspects of its work. The first is to find the prepsychotic and psychotic violators and place them in the hands of therapeutic psychiatrists, or to commit them to mental hospitals where they will have proper care in order to cure their mental diseases.

About four percent of the cases going through the Clinic every year are found to be suffering from a mental disease, and since in almost all mental diseases there are a certain number of curable cases, it is not too much to expect that among the four percent of the Clinic's intake, approximately ninety cases a year, a number of these patients should get well; and this is true. About half of our psychotic patients recover, some spontaneously, others with treatment. This is due to the fact that patients committing minor offenses often appear before the court and are placed in the hands of the psychiatrist before they would have been had they never committed an offense, for the reason that the families of these patients are usually overprotective, and, with a misguided idea of righteousness, would allow them to continue in their deterioration until such a point that hospitalization became imperative, when it was found that it was usually too late to make a prognosis as good as was desired.

Murderers

Among offenders there are two groups, who though not insane and not physically diseased are of interest to public health administrators. These two groups are the murderers (10) and the sex offenders. The State of Michigan has a new law, which I consider of no value whatsoever, which gives the Psychopathic Clinic of Recorder's Court the opportunity of seeing every murderer who is apprehended in the City of Detroit. This law was created for the purpose of preventing the rather unpleasant argument between defense and prosecution psychiatrists which would cast a shadow upon our specialty, an unjustifiable shadow, I must say, for there are many good reasons for this conflict. The law provides for the examination of the murderer before he is brought to trial in order to eliminate unfounded pleas of insanity. It has been in operation for eighteen months and I do not believe it has prevented by any such unfounded plea. However, it has given the Clinic a chance to examine these offenders and to learn why many of them get into trouble.

While the treatment of the murderer is not perhaps of primary significance, a comprehensive psychiatric study of every murderer who commits a crime in a large city over an eighteen months period of time should yield results, and the research which comes out of the study of these offenses should be of interest to those doing public health work, particularly those who are interested in the prevention of mortality. After all, mortality due to homicide is just as important as mortality due to any other cause, even though prevention of such mortality does not fall within the realm of the sanitarian, the public health nurse or the laboratory analyst.

I must say that after the information on murderers which we shall be able to disclose is in the hands of health departments, particularly health departments with a mental hygiene point of view and who are equipped to handle such problems, the prevention of a certain number of murders would be possible. I must admit, however, that the causes of some murders lie so deep in the cultural and economic background of the murderer, so far as I have been able to ascertain up to now, that the prevention would be difficult not only for the public health worker but for the psychiatrist and the policeman.

Sex Offenders

Sex offenders are important (11, 12, 13, 14, 15, 16) first because public opinion and public interest have been directed against them for the past seven years. In 1934 and 1935 there was a wave of sex crimes of a particularly gruesome and, to the morbid general public, interesting nature which reached the public press. Similar crimes have been committed in equal numbers in other years, but sex was a feature of our society which the newspapers picked up in the middle of the last decade.

Sex crimes, according to the statistics which I have been able to gather, are on a constant increase. I believe the increase to be rather proportionate to the growth of urban population and to have not too much connection with economic conditions as do other crimes. About half of the Clinic intake, excluding the traffic cases, consists of sex offenders. From the public health viewpoint, these people are interesting because they are sufferers from mild mental disorders and, even more, because they are likely to cause mental disorders in others by frightening young women and, although this is perhaps overstressed by health authorities, are potential disseminators of venereal disease. An interesting sex offense arising from Old World traditions should be mentioned apropos of this, namely, that leads the infected male immigrants of certain Slavic groups to attempt intercourse with a virgin in order to cure their gonorrhea. Hypersexed individuals, even knowing that they suffer from a venereal disease, occasionally rape a minor. I think we can be grateful that this type of offense occurs only once in many thousands of sex cases.

The category of sex cases contains a large number of individuals who commit indecent exposure and these persons are not particularly harmful to the public welfare, even though they offend the proprieties. Persons who tamper with minor female children make up another group and they are more harmful because of the mental effect that they have upon their victims. A third group consists of those who commit sodomy or other sexual offenses against young boys. These are very vicious persons.

The fourth and last group are homosexuals who as a rule do not attract the attention of the police, are not particularly antisocial, but they try to bring young males into their cult. The female homosexual is not as a rule brought before the court, although from a mental hygiene angle, she is extremely important as she is potentially homicidal. Some homosexuals are more serious than others, because they are usually so unstable and maladjusted that homocide is not beyond them. Some homosexuals are potentially suicidal. One of the functions of the Clinic is to prevent suicide if it is possible by aiding these individuals to readjust their lives.

The Clinic has not been successful in curing homosexuals, but the exhibitionists, pedophiles and others of the minor group have responded to several types of treatment. For instance, psychiatric supervision and a frank discussion of the situation by an expert is often useful. Psychoanalysis carried on by private psychiatrists has kept many of these individuals out of trouble. We were surprised to find that in going over a group of three hundred sex cases—the first three hundred sex cases admitted to the Clinic—that less than five percent of these persons have ever been in serious trouble during the succeeding fifteen years.

The Traffic Problem

The Clinic has been much interested in the traffic situation. In 1936 we created a special division for the examination of traffic cases to prevent traffic mortality and morbidity. A psychiatrist studying the bad attitude of the driver, working upon his mind, studying his physique, his personality and his mechanical aptitude would be in a better position to diagnose, treat and, if necessary, remove from the highway, abnormal drivers. In other words, the psychiatrist should begin where the engineer and the policeman left off in trying to cure the traffic situation.

With a mortality rate of over forty thousand per annum and a morbidity rate in the millions, traffic, to me, seems to be the most challenging public health problem today. It is not usually attacked by the public health experts because the police and the traffic engineers seemed to have the matter well within their administrative grasp and would resent the intrusion of the health officer who, in turn, has little chance to try new procedures for his department usually is understaffed even when he limits his activities to communicable diseases and sanitation.

Nevertheless, we find that there are a number of reasons for automobile accidents which fall within the province of those who are interested in medical matters. There is about the same number of insane among the Clinic's traffic offenders as among the general Clinic cases—about four percent. There are almost fifty percent of borderline feebleminded or feebleminded individuals in the traffic division intake. It must be admitted, of course, that the group is selected, that not all traffic cases pass before our traffic clinic so that only as many cases are seen in a year in the Clinic as one of our referees sees on one morning.

The Clinic has determined that many accidents are caused, first, by those who are physically unqualified to drive and are not caught by the licensing agency; and second, by the feebleminded and by the insane. (17, 18, 19, 20, 21, 22, 23, 24). I have discussed elsewhere various techniques which are being used to remove the insane from the highways, and I must emphasize the mental hygiene aspect of the mentally abnormal driver as one which cannot be ignored. I should like to urge health officers, who are in a position to add psychiatrists and mental hygiene facilities to their budget, to do so. They can begin their work with the treatment of the prepsychotic sex offenders and the elimination of mentally and physically sick traffic offenders.

Drivers with a faulty attitude comprise a large number of cases. These are interesting and their treatment is proving profitable to the community.

Conclusion

All in all, it would be well for the health officer to acquaint himself with media for mental hygiene work in his community and, if these are inadequate, to set about remedying the situation. A court clinic, as I have attempted to show, is not the least of the resources of the health department in the mental hygiene sphere, and it certainly serves as a coordinating center between the police, the courts, and the health agencies.

One must not overlook the fact that the clinic can diagnose, treat and suggest preventive measures in cases which might otherwise cause morbidity and mortality.

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PSYCHOPATHIC CLINIC, RECORDER'S COURT.

THE CHANGED CHEMISTRY OF BRAIN TISSUE IN THE PSYCHOTIC

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In Dr. H. H. McClellan's interesting article on the physical factors found in the psychotic states (1), the question was raised, why should the cerebrospinal fluid accumulate as it does within the skull in such excessive amounts as to cause brain compression. This pressure, and the lessened blood supply to the cortex, is thought to act in the same fashion as does the "wet brain" found in delirium tremens, or the meningism found associated with mass infections about the face or head in the first stages of pneumonia. The nerve supply conveying the five special senses is interfered with, causing hallucinations to occur which, in the reasoning sphere, are the cause of delusions. Judgment and power of decision are dependent upon normal ideation and reasoning. McClellan expresses his belief that a psychosis is but a prolonged delirium. Weed (1) believed some chemical change must occur in the fluid which makes it difficult to escape from the skull by osmosis through the pacchionian bodies on the under surface of the superior longitudinal sinus. Such fluid increase occurs from many sources and is not peculiar to the insane. McClellan thinks it is probably due to an infection, "a type of streptococcus infection that is constantly found in the psychotics which Rosenow of the Mayo Foundation named the neurotropic type, and that it is possible this infection in some manner so changes the chemistry of the spinal fluid as to make it impossible to escape normally from the skull and thus build up pressure that is found and interferes with the normal operation of the mind in delirium".

One should, however, be reminded of the fact that there is more than one etiological type of psychosis and more than one precipitating factor. Accumulation of recent data obtained from research other than in the field of psychiatry, leads me to believe that there not only exists a change in the chemistry of the cerebral fluid but of the brain tissue also; and that this derangement is a major factor in the pathogenesis of psychosis. The main fault appears in carbohydrate metabolism. The brain and central nervous system utilize glycogen, converting it into lactic acid which is removed by oxidation, none being resynthesized to glycogen as occurs in the glycogen-lactic acid cycle elsewhere in the body. (In the peripheral nervous system, no lactic acid is formed.) Any factor, physical or chemical, which interferes with proper carbohydrate metabolism in the brain will lead to a chain of vicious events. Faulty carbohydrate metabolism here results in lactic acid accumulations in localized areas. The pH of the fluids and tissues are then lowered (more acid) which interferes materially with oxidation of lactic acid and other abnormal products of deranged metabolism. A state of anoxia thus results to cause brain tissue degeneration changes. The change in the hydrogen ion concentration may also affect such labile brain tissue components as the phosphorylated fats, lecithins, cephalin, etc., which readily break down to result in irritating and toxic products. These phospholipids, when caused to lose fatty acid groups, become highly lytic agents (lysolipins), and show marked affinity for water, having the characteristics of absorbing whatever fluid may be present. When such fluids become slightly acid, morbid disturbances of fluid balance result, which become quite osmotically important in causing greater cell absorption and rupture of cell membranes. This ingress of the slightly acid fluids could explain the "wet brain" of the psychoses, delirium tremens, epilepsy, etc.

The phospholipins also contain the important nerve bases neurine $C_5H_{13}NO$, and its precursor choline $C_5H_{15}NO_2$, differing only in the amount of H_2O. Choline is the parent base of such lethal toxins as muscarine and mytilotoxin. When the elements of water are withdrawn from neurine and choline, they acquire properties identical to tetanospasmin $C_5H_{11}N$, a neurotoxin of a highly lethal nature (4, 5). This toxin, undoubtedly, is formed during tetanus infection through the interaction of the tetanus toxigenetic enzymes with these specific nerve bases, the decomposition commencing at the initial lesion and advancing progressively upward along appropriate nerve tracts. Upon reaching the brain and central nervous system, the evolved toxin from specific nerve bases sets up such irritation as to manifest itself in the violent symptoms of the disease. The hypothalamus and cerebral cortex, on becoming affected, serve to interfere with the frontine tracts conveying impulses which normally serve to release muscular rigidity, thereby becoming an additional factor in the tetanic spasms. The neurotoxin of rabies, lyssin, is quite analogous to tetanus toxin, both in the manner of its production and the effects produced. (Probably all socalled bacterial and viral toxins result from the interactions of the toxigenetic enzymes of the pathogens with specific tissue components cap-

able of undergoing enzymic decomposition. Thus each pathogen is able to manufacture its own typical toxin the toxicity of which is responsible for the symptoms of the disease.) (4, 5)

Phospholipids also contain phosphoric acid which plays an essential rôle in the regulation of acid-base equilibrium, and aids in utilization of the vitamin B complex and carbohydrate metabolism. A phosphoric acid disturbance may play some part in the initiation of diseased mental processes. In some birds and animals an athiaminosis (B_1 deficiency) produces epileptiform attacks, brain edema, and, in pigeons, an opisthotonos, due in part to excess brain lactic acid. In the pigeon, on a satisfactory diet, an opisthotonic state can be produced by the feeding of cyanide, selenium and other toxic salts (2, 6, 7, 8, 9, 10). The frontal region of the brain appears to be more sensitive to these toxic influences. All cyanides, and cyanogenetic substances inhibit oxidation, and interfere with tissue respiration. Vitamin B_1 activity is destroyed by various toxic agents; the explanation could well be found in the fact that B_1 ($C_{12}H_{17}N_3OS$) contains sulphur, and its activity is destroyed when sulphur, a detoxifying agent, combines with toxic substances, thereby inducing an athiaminosis (2, 6, 8, 9).

Vitamin B_1 aids oxidation of the carbohydrates through the lactic acid stage, the more carbohydrate being used, the greater the body's demand for vitamin B_1[1]. It also increases oxygen usage and cell respiration, and is concerned in the oxidation of lactic acid; the prevention of edema; and the regulation of intracellular fluids. Vitamin B_1 plays the rôle of a coenzyme in the oxidative action of the cells, e.g., the dehydrogenase systems concerned in the intermediary metabolism of the carbohydrates. (The dehydrogenase systems of the central nervous system and brain are very susceptible to oxygen lack, viz., the effects of anesthetics and narcotics to produce cerebral anesthesia and unconsciousness. These agents do not, however, appear to interfere materially in brain carbohydrate metabolism.) Vitamin B_1 therapy would appear indicated in those brain and nerve disorders in which there are morbid disturbances of fluid balance, and alteration in electrolyte concentrations resulting from either an insufficiency, or a faulty assimilation and utilization of this vitamin (6). However, should such tissues be so extensively damaged as to be beyond Nature's repair, then any vitamin, or, for that matter, any therapeutic measure would be unlikely to restore structures so injured and would be of no avail (6, 8, 9).

Glucose, by venoclysis, would appear of benefit as it inhibits production of brain edema, and lessens the destruction of body protein. This saving in protein tissue is always conducive to tissue repair. Solutions of sodium chloride may be added to glucose solution to aid in alleviating edematous and acidotic states. Nonspecific shock therapy with epileptogenic properties, as metrazol, and electric shock treatment, have their advocates, but a certain amount of healthy skepticism should arise regarding their use (3). The belief that they have curative value is without experimental confirmation. There are several other similar-acting epileptogenic and opisthotogenic agents, as metrazol, which also produce delirium, and duplication of symptoms of the various psychoses, e.g., absinthol, camphor, salviol, thyul, tanacetum and the camphenes among others. Tanacetum, from oil of tansy, interferes with carbohydrate metabolism, disturbs the acid-base equilibrium of brain tissue, and produces symptoms that cannot be differentiated from the disease rabies.

Insulin has proved to be a more efficient agent in the treatment of certain mental disorders than such shock-producing agents as metrazol, and electricity. Its beneficial effect may be attributed to its ability to utilize sugar and alcohol, in a normal manner, i.e., by burning more sugar (converting it into CO_2 and H_2O), and inhibiting lactic acid formation. Insulin causes oxidation of alcohol through increased oxygen consumption. Antagonists of insulin are the hormones of the anterior pituitary and adrenal glands, both these endocrine substances causing hyperglycemia, decreased oxidation, and other systemic disturbances. These insulin antagonizers might be put to some diagnostic use in bringing out potential and/or latent psychoses, epilepsy, etc.

It is hoped that more satisfactory methods will be developed for the treatment and/or prevention of the psychoses by further intensive study along the above-mentioned lines. At present, such agents that produce cerebral anesthesia would appear the method of choice. For subduing and controlling acute maniacal outbursts, the nausea-producing agents as apomorphine hydrochloride should find a place in the therapy. Drugs such as curare would also be indicated in the control of the muscular spasms, rigidity, and opisthotonos of certain psychoses, epilepsy, and the spasticities of rabies, tetanus, poliomyelitis, etc. Curare is capable of paralyzing muscles by interrupting the nervous influence at the neuromuscular junctions.

One cannot predict what clinical manifestations will develop in one deprived of certain essentials. The speed and extent of cure are subject to considerable variations. Such variations may occur in one individual and between individuals under the same circumstances. A study of the physiology of the acid-base equilibrium shows the importance of metabolic disturbances in the beginning and development of various disorders though some of these no doubt depend upon other special dysergic conditions of the patient.

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1805 FIFTH AVENUE

News Items

Annals of Medical History Suspended.—Announcement is made by Paul B. Hoeber, Inc., that with the November issue the publication of *Annals of Medical History* was suspended.

Research in Constitutional Diseases.—Among the recent gifts announced by Columbia University was a donation of $115,600 from the Rockefeller Foundation, to be used for a three-year research project on the constitutional aspects of disease.

New Medical College for Newark, N. J.—Dr. A. M. Koch, president of Essex Junior College, Newark, N. J., has announced plans for the establishment of a medical college in Newark, N. J., to be called the Essex College of Medicine and Surgery. The New Jersey Board of Medical Examiners, he says, has issued a license for the new institution.

Hahnemann Society of the History of Medicine.—This society was organized recently and has been admitted as a constituent society of the American Association of the History of Medicine. Dr. William H. Wolfram, of Cincinnati, Ohio, is president of this society and Dr. Marthe Cresson, also of Cincinnati, is its secretary.

Second Harvey Lecture.—The second Harvey Lecture in the current series was delivered at the New York Academy of Medicine, Thursday evening, November 19th, by Dr. Curt P. Richter, associate professor of psychobiology, Johns Hopkins University, Baltimore, Md. The subject of his lecture was "Total Homeostasis."

Round Table Discussion on the Menopause.—At a meeting of the Section of Obstetrics and Gynecology of the New York Academy of Medicine, held on Tuesday evening, November 24th, a round table discussion was held on the menopause and its problems. Dr. Frederick C. Holden was chairman and others who participated in the discussion were Dr. Harvey B. Matthews, Dr. Samuel H. Geist, and Dr. Ralph L. Barrett. There was also a general discussion.

Friday Afternoon Lectures.—The Friday Afternoon Lectures to be given at the New York Academy of Medicine during January are as follows:

January 8th: Present concepts and treatment of sinusitis, by Dr. Russell C. Grove, Roosevelt Hospital, New York.

January 15th: Shoulder pain and disabilities, by Dr. David M. Bosworth, St. Luke's Hospital, New York.

January 22d: Indications and contraindications for the newer anesthetic agents, by Dr. Milton C. Peterson, New York Post-Graduate Medical School, Columbia University.

January 29th: Modern treatment of the psychoses, by S. Bernard Wortis, New York University Medical College.

Nutrition Reviews—The Nutrition Foundation, Inc., New York, N. Y., brought out in November the first issue of *Nutrition Reviews*, a monthly periodical which has been established to provide an authoritative, unbiased, editorially interpreted review of the world's current research progress in the science of nutrition. Dr. Fredrick J. Stare, assistant professor of nutrition, Schools of Medicine and Public Health, Harvard University, is editor of this new journal. The subscription price is $2.00 per year. Address all communications to the Nutrition Foundation, Inc., Chrysler Building, New York, N. Y.

Clinical Society of Reconstruction Hospital.—At a meeting of this society, held at the hospital, Central Park West, New York, on November 18th, the evening was devoted to a discussion of fractures. Cases were presented by Dr. Richard U. Peterson, Dr. Walter D. Ludlum, Jr., Dr. Henry R. Ritter, Dr. David Goldblatt, and Dr. William H. Miller. Dr. Ritter also presented a case of post-traumatic ankylosis of the elbow. Dr. David Goldblatt is chairman of the society.

Grants for Scientific Research—The Committee on Scientific Research of the American Medical Association recently gave to Dr. Frederick M. Allen of the New York Medical College a grant for studies on refrigeration in surgery. The Committee also made a grant to Dr. Meyer M. Harris, of the Psychiatric Institute, New York, for further research on muscular diseases.

Lectures to the Laity.—The second lecture in the eighth series of lectures to the laity will be given at the New York Academy of Medicine, Thursday evening, December 10th, by Dr. Edgar Erskine Hume, Colonel, Medical Corps, U. S. Army. His subject will be "War and Medicine."

The Cardiac in Industry.—At a meeting of the Committee on Cardiac Clinics of the New York Heart Association, held at the New York Academy of Medicine, December 1st, with Dr. Clarence E. de la Chapelle as presiding officer, the problem of the cardiac in industry was discussed by Dr. O. F. Hadley, Surgeon, United States Public Health Service. Dr. Rufus B. Crain, medical department, Eastman Kodak Company, Rochester, N. Y., discussed the placement of the cardiac in industry.

Symposium on Prostatic Carcinoma.—At a stated meeting held at the New York Academy of Medicine, under the joint sponsorship of the Academy and its Section of Genitourinary Surgery, the scientific program consisted of a symposium on prostatic carcinoma. Dr. Charles B. Huggins, professor of surgery, University of Chicago, read a paper on the diagnosis of prostatic carcinoma and its metastases, including the value of phosphatase determinations, and Dr. Benjamin S. Barringer, Department of Urology, Memorial Hospital, New York, read a paper dealing with its treatment.

Dr. Wile to Study Venereal Disease Control.—Dr. Udo J. Wile, professor of dermatology and syphilology, School of Medicine, University of Michigan, Ann Arbor, has been commissioned a medical director (R) in the U. S. Public Health Service for active duty with the Division of Venereal Disease Control. He will conduct a study of all new methods described in recent years by various clinicians for the intensive treatment of syphilis. He will also supervise the quarantine hospitals which the Public Health Service and the states are developing in a number of critical war areas. These hospitals are for the treatment of prostitutes and recalcitrant persons who are infected with syphilis and who are capable of spreading the disease. Through quarantine and intensive treatment of infectious cases under controlled conditions, it is expected that the most effective and economical methods for the clinical management of syphilis will be demonstrated and their prompt adoption insured. The hospitals will be staffed by physicians, nurses, and record analysts of the Public Health Service.

Personal.—Dr. William H. Wolfram, of Cincinnati, Ohio, has been named historian of the American Academy of Physical Medicine. This is a new position which was created at the twenty-second annual meeting of the academy, held in Boston last October.

Dr. Charles Brenton Huggins, professor of urology in the University of Chicago, has been awarded the Katherine Berkan Judd $1,000 prize for "outstanding research in the field of cancer."

Dr. Arthur B. Lamb, dean of the graduate school of arts and sciences of Harvard University, has been awarded the 1943 William H. Nichols Medal of the New York section of the American Chemical Society, for his work on inorganic chemistry.

Dr. James Ewing will read a paper on the "Chronology of Mammary Cancer" at a meeting of the New York Pathological Society, in affiliation with the New York Academy of Medicine, Thursday evening, December 10th.

Dr. Ernest R. Hilgard, professor of psychology at Stanford University, has been recently appointed head of the department of psychology to succeed Dr. Lewis M. Terman, who resigned last summer.

Dr. Perrin H. Long, professor of preventive medicine at the Johns Hopkins University School of Medicine, was awarded the research medal of the Southern Medical Association at the annual meeting held in Richmond last month. The award was made "in recognition of his outstanding contributions to the knowledge of bacteriology and chemotherapy".

Major General Robert U. Patterson, U. S. Army, retired, formerly surgeon general, has been appointed dean of the University of Maryland School of Medicine and College of Physicians and Surgeons, and superintendent of the University Hospital in Baltimore.

Dr. Thomas D. Dublin, epidemiologist in the division of communicable diseases of the New York State Department of Health, has been appointed head of the department of preventive medicine and community health at the Long Island College of Medicine.

Dr. Charles-Edward A. Winslow, Anna M. R. Lauder professor of public health at Yale University School of Medicine, was awarded the William Thompson Sedgwick Memorial Medal at the recent annual meeting of the American Public Health Association held in St. Louis, Missouri. This medal is awarded for distinguished service in public health.

Dr. Alfred Blalock, professor of surgery at the Johns Hopkins University School of Medicine, delivered the annual Lower Lecture before the Academy of Medicine at Cleveland on November 20th. His subject was Surgical Shock.

Art Exhibit and Hobby Show.—A preview of the Art Exhibit and Hobby Show which is sponsored by *The New York Physician* in cooperation with Eimer and Amend Apothecary, was held on Monday evening, November 16th. The exhibit is being held at 49 East Thirty-fourth Street, New York, and will be continued through December 18th. Over one hundred and fifty art pieces have been submitted by doctors, and while most of the entries have come from the metropolitan area, a number have been received from New Jersey and Connecticut. Several pieces have come from Dr. Henry Smith Williams, of Los Angeles, Calif. Among the exhibits are many etchings which have been donated by the members of the Haden Etching Club.

Dr. Crumbine Honored.—Dr. Samuel J. Crumbine, formerly state health officer of Kansas, now of New York, was given a testimonial dinner on November 12th, at the Waldorf-Astoria Hotel, by the Kansas Society of New York. Charles P. Taft, assistant director, Defense Health and Welfare Services, Federal Security Agency, Washington, D. C., was the principal speaker, and his subject was the present national health emergency.

Dr. Crumbine became a national figure during the first world war when he was placed in charge of disease prevention in six western states and his successful methods became a pattern followed in other zones. He was also a pioneer in the abolition of the common drinking cup. It was due to his efforts that the United States formed the Tri-State Sanitary Department, with Dr. Thomas A. Parran, now Surgeon General of the United States Public Health Service, in charge.

Annual Forum on Allergy.—The fifth annual forum on allergy, an international postgraduate society, will be held at the Hotel Statler, Cleveland, Ohio, during the week end of January 10th. A program of unusual interest has been arranged, which will cover both the new and the old in allergy, and various types of instruction will be used in the presentation of this material. There will be formal lectures, special talks, clinics, study groups, motion pictures, panel discussions, ending with an "Information Please" on allergy. This discussion has been arranged not only for those who specialize in this field of internal medicine, but also for those whose interests are in allied fields, especially diseases of children, skin diseases, diseases of the eye, nose and throat, also those engaged in research in immunology. Fifty-eight specialists in allergy, most of them leaders in the field, will participate in the program, Dr. Arthur Coca, New York, N. Y., will present the annual Forum lecture on Sunday afternoon, January 10th, and will receive the Forum's gold medal. During the week preceding the forum, a course in immunology as it applies to allergy will be given by Dr. Eckers. For programs of both meetings write to Dr. Jonathan Forman, 956 Bryden Road, Columbus, Ohio.

Special Awards of the American Physical Therapy Congress.—The Gold Key award of the American Congress of Physical Therapy, presented annually to "those who by their special contributions to the science of physical medicine are recognized for their particular value to our times and the healing art," was given at the recent annual meeting to Sister Elizabeth Kenny for her contribution to the treatment of infantile paralysis. This is the first time in the history of the congress that this special distinction has been awarded to a woman.

The following awards for scientific exhibits have been announced: The gold medal to Dr. O. Leonard Huddleston and Adaline S. Bullen, of the University of Colorado School of Medicine, for their exhibit depicting principles of speech analysis; the silver medal to Dr. Karl Harpuder and Dr. Irvin D. Stein, Montefiore Hospital, New York, for photographs of minute blood vessels; the bronze medal to Dr. Kristian G. Hansson and Florence Liljander, Hospital for Special Surgery, New York, for exhibiting exercises for low back strain; honorable mention to Dr. Joseph Kovács, Post-Graduate Medical School and Hospital, New York, for diagnosis and treatment of leg ulcers.

CHRISTMAS PLANTS AND CHRISTMAS TREES IN MEDICINE

WALDEMAR SCHWEISHEIMER

New Rochelle, N. Y.

Everyone who enters a room decorated for Christmas inhales with pleasure its aromatic fragrance. The scent of Christmas trees recalls the pleasant days of summer and vacations when the sun sent its rays down on the trembling pine needles. This pleasant scent produces a curative effect on the respiratory organs, it cures inflammations and catarrhs.

The use of evergreen trees and shrubs has always been associated with the feast of the solstice, in Christian days as well as earlier in pagan times. But not until the sixteenth century were Christian houses commonly decorated.

Christmas Trees

Various trees are used for Christmas, depending upon the section of the country. Douglas fir and other kinds of firs, hemlocks, pines, spruces, red cedars, etc. There is an old legend that the fir is the tree of life which once bloomed and fruited freely, but Eve plucked its fruits, whereupon its foilage shrunk into tiny needlelike leaves. On the night that Christ was born, it began to bloom again.

Everyone has seen a thick resinous substance oozing from the stems of Christmas trees, which hardens when exposed to the air. This is turpentine or white turpentine. Crude or gum turpentine is obtained by chipping the tree trunks and collecting the exudate. The flow of gum turpentine commences as soon as the trunk is cut, and nearly ninety percent of the exudation occurs within the first three days.

The season usually begins in March and continues until October or November, after which the flow of pitch ceases. The crude turpentine contains about twenty percent of spirits of turpentine, sixty-five percent of rosin, five to ten percent of water, and some bark and dirt. Resin is the crude liquid, while rosin is the hard, brittle substance left after the turpentine has been extracted. The resin is melted in a still, and the volatile oil distilled and collected in barrels. The liquid resin of Abies balsamea, the balsam fir, is the "Canada balsam" employed in every laboratory for the mounting of microscopic specimens.

Oil of turpentine is a colorless liquid which is insoluble in water which is, however, an excellent solvent for phosphorus, sulphur, iodine, resins, etc., and is, therefore, used in the preparation of paints and varnishes. Prolonged occupation with turpentine may result in unpleasant and obstinate eczemas, particularly in cases where there is hypersensitivity to turpentine.

The inhalation of heavy fumes of turpentine induces symptoms of a mild narcotic poisoning, and the occurrence of nephritis has been reported from prolonged exposure. Two distinctly different forms of turpentine poisoning have been described, one form consisting chiefly of irritation of the conjunctiva, the nose, throat and larynx, and sometimes accompanied by a severe headache. Another more severe form consists, in addition to these symptoms, of mental confusion, dizziness, and a characteristic odor of the urine (odor of "violets") followed possibly by organic kidney disease. The odor of violets in the urine may continue for some days.

On the other hand, turpentine may be used in several ways to produce healing effects on the body. It is applied to the skin to relieve pain and as a rubefacient, to draw blood from the deeper tissues to the superficial layers of the skin. Other indications for its use are: to increase the flow of urine; to expel gas from the intestines; to increase cough and expectoration, and to check the growth of bacteria in the lungs and the bronchi.

Turpentine oil enjoys a reputation as an antiseptic and a disinfectant, and has been used to disinfect the skin before operations and for similar purposes. For its effect on the skin, turpentine liniments are used, or the drug is applied in the form of a stupe. A piece of flannel is dipped in hot water, to which a few drops of hot turpentine oil have been added. The flannel is wrung out and applied over the skin, which should be covered with vasoline to prevent the formation of blisters.

Internally, turpentine is frequently given in the form of capsules or in emulsion for the treatment of biliary colic and gallstones; it is supposed to increase the flow of bile (cholagogue). Turpentine, furthermore, is given in combination with castor oil to destroy tape worms and round worms; this use, however, is not frequent because of the danger of causing toxic symptoms. As an expectorant, it is frequently given by inhalations. Small amounts are added to enemata to help the expulsion of gas.

Christmas Rose

Christmas rose (Helleborus niger) blooms at an unusual season; from December to March, with white, sometimes pink tinted blooms. This fact has given the flower the name Christmas rose. A legend relates that when the Wise Men were journeying toward Bethlehem they came upon Madelon, a young girl who was tending her sheep. The girl complained to an angel that she had no gift for the Holy Child, whereupon the entire pathway to Bethlehem was flowered with glistening white Christmas roses. Madelon offered the flowers, and when the fingers of Jesus touched the white flowers, they became suffused with pink. The surname, niger, was given to this kind of hellebore because the roots are black.

Helleborus niger contains the glycosides helleboreine and helleborine in the Radix hellebori nigri that used to be official. It belongs to the digitalis plants and the root has been given as a decoction (1:100). This decoction produces local irritation, and larger doses cause vomiting and diarrhea.

The resorption of the drug is insufficient. Poisoning is easily possible. Consequently, the use of the drug as a heart stimulant and diuretic has been abandoned. The drug is still in use in homeopathic prescriptions as a diuretic for dropsy as well as in the treatment of meningitis. Poisoning by Helleborus niger causes symptoms similar to digitalis poisoning; convulsions may precede death.

In Greek antiquity Helleborus niger has been used

as a war weapon. According to a story of Pausanias, noted Greek writer of the second century, A.D., the Athenian reformer, Solon, besieged the community of Kirrha or Krissa, about 600 B.C. The small river Pleisthenes flowed through the town in the form of a canal and supplied it with drinking water. Solon drained the river off, and the besieged army was compelled to rely on the small amount of rain water.

Solon order many roots of hellebore, which grew plentifully in the surroundings, thrown into the water of the river, and when he believed that enough poison had been extracted, he sent the water again into the town canal. The town soldiers, happy about the regained water, drank as much as they could. This resulted in severe attacks of diarrhea so that the soldiers could not guard the walls any longer, and the town was captured.

Theophrastus of Eresius tells us that hellebore in ancient Greece was gathered in a particular way; before cutting, the rhizotomi or root-gatherers, smeared themselves with oil or consumed large quantities of garlic.

The plant was given as a purgative and was furthermore thought to cure insanity. One of the earliest instances of a care for the soul-sick is found in the shipping of patients of a gloomy temper to Anticyra, where the herb grew plentifully. Melampus who was believed by the Greeks to have been the first mortal who practiced the art of medicine, cured the women of Argos of a severe distemper which made them insane. The king of Argos showed his gratitude by giving Melampus part of his kingdom.

The Gauls used hellebore as arrow poison for hunting as well as fighting. The same is related from the Spanish Moors. Paracelsus constantly prescribed hellebore; the white kind (Veratrum album) for people under fifty, and the black (Helleborus niger) for those over that age. He believed with the Greeks that black hellebore had a rejuvenating effect on old people. It was gathered when the moon was in one of the signs of conservation, dried in an east wind, and mixed with its own weight of sugar. A pinch of this mixture was taken every morning and night.

Mistletoe

Our custom of decorating the home with mistletoe at Christmas time goes back to the ceremonials of the Druids, and is partly a reminder of their winter custom of keeping green things indoors as a refuge for the spirits of the wood, exiled by the severities of cold and snow.

Mistletoe was called the "all-healer" by the Druids, the priests and physicians of the ancient Celtic nations. Mistletoes are parasitic plants which grow on a great variety of trees, preferably oaks. The Druids believed mistletoe to be a panacea for all diseases, and an antidote against poisoning. If animals drank a potion made from it, they became magically fruitful.

The mistletoe was in many countries the object of superstitious veneration. In some of the temples of the goddess Venus it had a particular significance which has a bearing on its curious modern association with kissing. The Arch-Druid and his fellow priests performed their rites at the winter solstice with elaborate ceremonies centering about the mistletoe.

Another explanation of the custom of kissing under the mistletoe is given by an old Scandinavian myth. Balder, the Scandinavian counterpart for Apollo, had been struck by an arrow from the mistletoe. He was restored to life, however, and Frigga, the goddess of love and beauty, grateful for the return of her son, bestowed a kiss upon anyone who passed under the mistletoe. Monkish herbalists declared that the Sacred Cross was made of *lignum sanctæ crucis,* wood of the mistletoe.

The mistletoe's use by the Druids has been described by Pliny. The Druids, he says, held nothing more sacred than the mistletoe and the tree that bears it, the oak. The mistletoe must be gathered fasting; the branches and herbs were immersed in water, and the infusion then became possessed of the power to preserve from disease those who drank it. Oak-mistletoe thus obtained was, according to Pliny, deemed a cure for epilepsy; carried about by women, it assisted them to conceive; and it healed ulcers if the sufferer chewed a piece of the plant and laid another piece on the sore.

"All-healer" is said to be still a name of the mistletoe in the modern Celtic speech of Brittany, Wales, Ireland, and Scotland. John Knott, of Dublin, calls the mistletoe a monster in botany, a dryad in mythology, a panacea in the therapeutics, and a perennial Yuletide symbol of survival and reproductive vitality.

Mistletoe has been the object of pharmacological research during the last decade in several countries, particularly in Germany. Some pharmacologists emphasize the lowering influence on blood pressure of mistletoe extracts (stems and berries), and they connect this observation with its content of choline.

Folk medicine never has lost the use of the plant. The tea of mistletoe is still used for the treatment of epilepsy and various forms of excessive bleeding.

Holly

Many Christmas greens are used for decorating our homes and churches during the festival season, and the plants most commonly in use for this purpose are holly, ivy, laurel, rosemary and mistletoe; also yew, box, foliage of pine and fir, the winterberry, and so on.

The picturesque form of the dark glossy leaves of the holly, and the brilliant clusters of its large red berries, make it very attractive. Holly was sacred to the Druids because of its evergeen leaves.

The legend relates that the Crown of Thorns was plaited with the spiny leaves of the holly. Before the Crucifixion the berries were white but afterwards turned crimson, like drops of blood. According to an old superstition, whoever brings the Christmas holly into the house first, husband or wife, will rule the ensuing year.

Folk medicine uses the decoction of dried holly leaves (Ilex aquifolium) as an antipyretic. The leaves contain ilicine, ilexanthine, ilex acid and tannic acid. A decoction of the leaves and ilicine are said to be useful in the treatment of intermittent fever. They are also used for chronic bronchitis, gout and lithiasis. Baccæ aquifolii, the berries of Ilex aquifolium, were used for epilepsy and as a mild purgative.

Rosemary

Rosemary, besides its rich fragrance, was supposed to possess many occult virtues. "There's rosemary" says Ophelia, "that's for remembrance". The fact of its being in bloom at the Christmas season has introduced rosemary into the celebration of this feast.

Rosemary, according to a legend, opened to hide the Virgin and her child from Herods's soldiers, a legend it shares with the juniper and other trees. Mary is said to have spread the line of her child on a rosemary bush. Another legend tells that, in the flight from Egypt, the Virgin Mary threw her blue cloak over a bush of rosemary when she lay down to rest. Ever afterwards, in honor of her, the flowers were the heavenly blue of the mantle.

For medicinal purposes rosemary is still in use in Oleum rosmarini and Unguentum rosmarini compositum. It is one of the most popular remedies of folk medicine. In his great gardening book, *Paradisus Terrestris*, John Parkinson, the English herbalist, wrote in 1629, "that the medicinal uses of rosemary are so many you might be as tyred in the reading, as I in the writing, if I should set down all that might be said of it."

According to Clarkson, the herbalists recommended rosemary because of its ability to raise our spirits. Little cakes or drops made of the flowers and sugar were supposed to comfort the heart and quicken the spirits. The oil was "accounted a sovereign Balsame"; the distilled water was used for halitosis; the flowering tops were good for "headache, tremblings of the limbs and all other nervous disorders". Anthony Askham, 1550, takes care of the ills which rosemary will cure, in one recipe: "Take the flowers and put them in a lynen clothe, and so boyle them in fayre clean water to the halfe and cole it, and drynke it for it is much worth against all evyls in the body."

Folk medicine today uses Spiritus rosmarini for embrocation. Tea made from the leaves has been given for menstruation troubles, fluor albus, as abortivum, as diuretic, for the treatment of chronic gastritis and for epilepsy. Unguentum Rosmarini compositum is rubbed in for sprains, bruises and contusions. In former times Aqua vulneraria spirituosa—a mixture of rosemary leaves, sage, lavender, peppermint, wormwood and rue leaves—was used for the treatment of shot wounds and infected ulcers.

SHAKESPEARE'S MEDICAL SON-IN-LAW, DR. JOHN HALL

The Honourable WILLIAM RENWICK RIDDELL
Toronto, Canada

We all know or think we know a great deal about William Shakespeare (Shakespear, Shakspere, Shaxper, as it is sometimes written). We know of the magnificent works, comedies, tragedies, poems, attributed to him by most scholars, though there are some of respectable standing who deny him that merit and contend for an authorship of much higher standing.

Many of us have visited Stratford-on-Avon, his birthplace, and have seen the by no means dignified memorials to him in the church. Some of us have seen the cottage on the south side of the road leading from the city, where he, as a youth, was wont to visit and woo Anne Hathaway.

We know that, after a moderate success as an actor, he returned from London to his native city to end his days there amidst his family and early friends. But few have known of his connection with the medical profession through his eldest daughter, Susanna, who married the medical practitioner, Dr. John Hall.

John Hall, M.D., was born in Warwickshire in 1575, the son of William Hall, also a practitioner of medicine. In medicine, be it noted, surgery was not recognized as a learned profession. At least, bleeding, which it was considered, was called for most frequently, as a sick man was generally considered to require bleeding, was left to the barber. The barber placed at his door, a pole around which were wound two bandages—one indicating the condition of the patient before the bleeding, and, therefore, white; the other, after the operation when the bandage had been colored with the blood. Every day we see the ghost of this practice—the barber today places at his door a pole with a representation of two encircling bandages, one white, the other, red. Everyone knows the barber's pole; few know its meaning.

John Hall was well educated. His college and university do not seem to be known, at least, no authority which I have consulted gives either. He was sent to France, where it is believed he received his M.D.; returning to England, in 1600, he settled in Stratford-on-Avon, where he acquired a good practice.

He married Susanna, the eldest daughter of Shakespeare, in 1607. The esteem in which he was held by his father-in-law may perhaps be indicated by the fact that the poet made him and his wife executors of his last will and testament. It was the time of intense religious convictions, and Dr. Hall was an intense Puritan. No one who reads Shakespeare's works could conceive him to be the same as his son-in-law. Hall refused a knighthood on the coronation of Charles I, for which contempt, he was mulcted a fine of ten pounds, but he became a prominent figure in municipality matters, as well as in the Church. It is true, indeed, that his connection with either was not without its troubles; but he seems to have had the confidence of his fellow-citizens.

He died in 1635, and was buried near his father-in-law, who had predeceased him by some nineteen years. His wife, his son-in-law, Thomas Nash and Anne Hathaway share with him a resting-place within the altar rails of the church in old Stratford-on-Avon. *Requiescat in pace.*

A manuscript of some two hundred cases, written in Latin, which he left behind, was sold by his widow, and is now in the British Museum. A translation in English was published in 1657, and at least two subsequent editions appeared.

OSGOODE HALL

Note

I should not omit to say that before this sketch was completed, there came to me a very excellent, accurate and exhaustive address on the subject by Dr. E. P. Scarlett, made before the seventy-fifth annual meeting of the Canadian Medical Association, June 19, 1940. While I had collected most of the information before receiving this address, I have not hesitated to use it in many cases.

Book Reviews

The Libido

Introduction to the Psychoanalytic Theory of the Libido. By RICHARD STERBA, M.D. Nervous and Mental Disease Monographs, No. 68. New York: Nervous and Mental Disease Monographs, 1942. Pp. 81. Price $2.00.

The nervous and mental disease monographs go steadily on, and now we have No. 68, by Richard Sterba. Much has been written about the libido, and rightly so, for there are many of them: some are anchored, some are floating around loosely, and most of them are having a hell of a time finding out where they belong and why and what they should do with themselves.

Most of the material that has been written about the libido is complex; and when one finishes examining the writing on this subject, one's own libido is likely to be warped, confused, or at least slightly stunned. Be that as it may, this book of Sterba's is a serious study but presented in a sound, clear fashion. Of course, there are technical terms in it but they are less understandable than they would be in most texts for they fit into a flow of subject matter which circumvents the usual difficulty of understanding.

Briefly, one encounters a survey of the instincts, human and child sexuality, and finally the vicissitudes of the instincts. For anyone who wishes to delve more deeply into the understanding of the libido, this book is well worth careful reading.

Psychiatry

Fundamentals of Psychiatry. By EDWARD A. STRECKER, M.D., Sc.D., F.A.C.P., professor of psychiatry and chairman of the department, Undergraduate School of Medicine, University of Pennsylvania. Fifteen illustrations. Philadelphia, London, and Montreal: J. B. Lippincott Company, 1942. Pp. 201. Price $3.00.

There are many ponderous tomes on psychiatry, and it takes a certain amount of courage to write another one. Strecker seems to be aware of his barging in and having a new book printed on psychiatry for he says in his preface: "Of the making of books there is no end and much study is a weariness to the flesh"; and yet there is every good reason why this book should have been written, published, and made available to the medical profession.

This is not a deeply profound book, yet it is an extremely sound book; and most important of all, it should be an extremely useful book. There is a great shortage of psychiatrists as specialists, and the shortage will become ever increasingly apparent as the war goes on, yet every successful practicing physician is a psychiatrist even though he may not be able to give a sound or extensive technical terminology to his own practical practicing of psychiatry. It is highly important at this moment that every practicing physician—specialist or general practitioner—give more thought to the psychogenic and neurotic factors which, as a specialty, hitherto have been relegated to the confirmed specialist. In many instances with the increasing shortage of physicians the practicing physicians will be obliged to employ or make use of the fundamentals of neuropsychiatry.

We are strongly of the belief that every physical ailment is closely related to psychogenic factors, and for the greatest good to the patient these factors must be given due consideration and correlated to any physical, chemical, or surgical treatment. We know full well that all emotional reactions, especially those of anxiety, affect every cell in the body; and we believe that it is a great error to disregard these factors in caring for sick or disabled patients. We also believe that the medical fraternity has done unwisely in not integrating more substantially these psychogenic factors in the diagnosis and care of the human. So much for the need of the book.

About the book itself, it is a brief survey of the general neurotic and psychogenic factors and conditions which one most commonly encounters. The subject is presented without going into highly technical and remote considerations. There are comprehensive graphs throughout the text which are useful in portraying the subject matter and making it more easily understandable. The book is highly modern and even covers briefly the more commonplace neuropsychiatric conditions which may be found in war conditions. We recommend this book to the general practitioner, and we think every psychiatrist should read it too, for we believe that the psychiatrist might benefit by seeing how this highly complex subject can be presented in simple and useful form.

Abdominal and Genitourinary Injuries

Abdominal and Genitourinary Injuries. Prepared under the auspices of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Illustrated. Philadelphia and London: W. B. Saunders Company, 1942. Pp. 243. Price $3.00.

In this small volume, which is Volume III of the Official Military Surgical Manuals, the several authors of the seventeen chapters have tried to give a brief outline of abdominal and pelvic injuries and their immediate treatment at or near the scene of battle. The first section comprising 130 pages was prepared under the supervision of Dr. Ambrose H. Storck. The source material is, therefore, presumably his, but he gives many references at the end of each chapter. If this is an "emergency book" to be pulled out of a trunk or pocket at or near the casualty station, one wonders how these references are going to serve the hurried consultant! The need for speed in doing abdominal emergency surgery is well illustrated by a graph which shows that in a series of forty-six cases of penetrating wounds of the abdomen (in civil practice) many more lived where the operation required sixty-two minutes than where eighty-two minutes were consumed. Exact percentages are not given. Shock and hemorrhage are still the two great enemies of the surgeon, and this in spite of the newer techniques of using whole or preserved blood.

Genitourinary injuries are difficult of diagnosis and require hospital facilities of a high order. Injuries to kidneys and ureters may be discovered and managed by the abdominal surgeon. In any case it is extremely important to empty the bladder or rupture may take place with a fatal issue. Chapter VI has an excellent list of "do's and don't's" set in apposition column-wise. This is excellent for ready reference, but should be committed to memory because of the transcendent importance of the facts. Throughout this volume, the cuts and line drawings are very helpful to an understanding of the text.

Heart Disease

Heart Disease. By PAUL DUDLEY WHITE, M.D., lecturer in medicine, Harvard Medical School. Second edition, completely rewritten and reset. New York: The Macmillan Company, 1941. Pp. 744. Price $8.00.

This new edition on the diagnosis and treatment of heart disease is clear, concise and comprehensive, despite the obscure problems mentioned in almost every chapter. Yet it is not a book concerned with anatomy, physiology, pathology, pharmacology or instrumental technique. There are four parts. The first deals with the examination of the patient and the analysis through symptoms and signs; the second, discusses the etiology, type and causes of heart disease; the third, deals with the structural changes in the heart and great vessels; and the fourth takes up the disorders of function. No longer in the diagnosis of heart disease can we be content to think of pathology alone, nor yet should we abandon structural changes to consider functional ones. We must think not only of structure and function but of etiology as well in the actual management of the patient. Circulatory disorders that have a direct bearing on the function of the heart are included in each discussion. The arrangement of the book is, therefore, similar to that which proved useful in the first edition. Part I: Cardiovascular examination involving symptoms and signs. Part II: The incidence, causes, and types of heart disease. Part III: Structural cardiovascular abnormalities. Part IV: Disorders of cardiovascular function. The book is of immense value to the practitioner in that it reveals all aspects of heart disease in terms of mechanism as a basis for management.

Sex Hormones

Biological Symposia. A series of volumes devoted to current symposia in the field of biology. Edited by JAQUES CATTELL, editor of *The American Naturalist* and *American Men of Science.* Volume IX. Sex Hormones. Edited by F. C. KOCH, Frank P. Hixson distinguished service professor and chairman of the department of biochemistry of the University of Chicago, and PHILIP E. SMITH, professor, College of Physicians and Surgeons, Columbia University. Lancaster, Pennsylvania: The Jaques Cattell Press, 1942. Pp. 146. Price $2.50.

The series of biological symposia gotten out by Jaques Cattell has added to it a book on the sex hormones. The title is somewhat misleading; while the monograph deals only with sex hormones, the scope of the ground covered is rather limited for it deals mainly with two phases; namely, metabolism and sex inversion. In the metabolic section of the book a considerable portion of the experiments and findings have been done in the human; whereas, in the second part of the book dealing with the inversion of sex, the work has all been done in animals.

Professor Carl R. Moore has covered briefly the comparative biological action of the male and female hormones; Dr. A. T. Kenyon has gone into the metabolic influences of the male and female hormones; Professor Edward A. Doisy has confined his study to the metabolism of the estrogens (the paper concerns itself mainly with the effect of the body on the estrogens as well as the effect of the estrogens on the body); Professor F. C. Koch has given a most comprehensive picture of the metabolism and excretion of the male sex hormone both in health and in various diseased conditions.

The second part of the book dealing with endocrinological factors of sexual inversion is limited completely to animal work. Professor C. H. Danforth has studied the effect of sex inversion on the plumage of birds; Professor R. R. Humphrey has taken up the amphibia; Dr. R. R. Greene has presented the embryonal changes due to sex hormones in the rat; and Prof. R. K. Burns, Jr. has given interesting data on the modification of sex in the opossum.

We feel that this volume has been rather carefully compiled and we hope that the biological symposia will eventually bring out more volumes on the hormones covering a wider field.

Blood Banks

The Blood Bank and the Technique and Therapeutics of Transfusions. By ROBERT A. KILDUFFE, A.B., A.M., M.D., F.A.S.C.P., director of laboratories, Atlantic City Hospital, and MICHAEL DEBAKEY, B.S., M.D., M.S., F.A.C.S., assistant professor of surgery, School of Medicine, Tulane University of Louisiana. With two hundred and fourteen illustrations and one color plate. St. Louis: The C. V. Mosby Company, 1942. Pp. 558. Price $7.50.

Blood transfusion is the universal therapeutic procedure in most hemorrhagic problems. Although of ancient heritage it was not until the present century that it became scientifically established on a firm foundation. More recent developments have initiated the blood bank and preserved plasma. Hence the compilation and crystallization of current literature on this aspect of transfusion therapy. Despite the contraindications and controversies regarding techniques, the authors have placed final evaluation on all data by virtue of their extensive experience. After a critical discussion of indications and contraindications for transfusion in civil and military life, the blood bank is discussed in great detail. Chemical changes in blood and plasma, maintenance of reserves, preparation of dried plasma are all considered in a practical manner. Details in procedure that stump technicians and transfusionists are adequately cleared for inquiring minds. The last chapters not only present the techniques of transfusion but also the great variety of complications encountered in civil and war medicine. The book is opportune, practical and enlightening.

Pediatrics

The 1941 Year Book of Pediatrics. Edited by ISAAC A. ABT, D.Sc., M.D., professor of pediatrics, Northwestern University Medical School. With the collaboration of ARTHUR F. ABT, B.S., M.D., assistant professor of pediatrics, Northwestern University Medical School. Chicago: The Year Book Publishers, Inc., 1941. Pp. 512. Price $3.00.

The recent advances in pediatrics embrace so many aspects of general practice pertaining to infants, children and adolescents that this yearly summary has become indispensable for the progressive practitioner. The style and arrangement have proved so beneficial in the past that the present edition continues in the same vein. After a review of problems of the newborn, articles of importance are summarized on nutrition, metabolism, allergy and systemic disorders pertaining to all organs and tissues. There are also chapters on public health, therapeutics and surgery. The book is interspersed with original illustrations from the articles reviewed. There is no question about the value of this yearly contribution to pediatric practice.

Biographical Sketches

American Jewish Physicians of Note. Biographical Sketches. By SOLOMON R. KAGAN, M.D. Illustrated with 129 portraits. Boston, Mass.: Boston Medical Publishing Company, 1942. Pp. 304. Price $5.00.

This is a well gotten up book containing short biographies of the various prominent Jewish physicians of the United States. It contains a great many photographs and should prove useful as a reference book as it also contains considerable biographical data.

A Medical Calendar

Memorable Days in Medicine. A calendar of biology and medicine. By PAUL F. CLARK and ALICE SCHIEDT CLARK, Department of Bacteriology of the University of Wisconsin Medical School. Madison: The University of Wisconsin Press, 1942. Pp. 305. Price $2.00.

Paul and Alice Clark must have spent a great deal of time and thought in the planning of this interesting volume. The book is divided into the months and days of the year as a sort of calendar, and each month represents a chapter.

It is interesting to note that under almost every day of the year, one will find that some important personage contributed something to the field of medicine. All of the great and near-great contributors to the field of medicine, both direct and indirect, will be found chronicled under the various dates from January through December. It might be interesting to attach this book to a calendar and study, from an historical point of view, the data of these men through the months one turns one's calendar. It is rather interesting to see how men throughout the world contributed to the progress of medicine not only through the days but through the centuries.

Psychotherapy with Children

Psychotherapy with Children. By FREDERICK H. ALLEN, M.D., director, Philadelphia Child Guidance Clinic; assistant professor of psychiatry, University of Pennsylvania Medical School. New York: W. W. Norton and Company, Inc., 1942. Pp. 311. Price $3.50.

Children with personality and behavior difficulties can be helped to help themselves. These principles of therapy formulated arise from an understanding of human growth and continuous change. The child in the classroom, the child adapting to the foster home, the child suffering from physical illness, the child in conflict with the law; in each instance we have a child in the life situation that brings the pediatrician, the teacher, the social worker into his life in a significant way. Since they stand in a professional relation to the child the book is addressed to them. The major emphasis is placed on the participation of the child in the therapeutic process. The book, therefore, deals with only one-half of the therapeutic process in a child guidance clinic; the other half is still to be written by one skilled in the art of case work with parents. The sequence of the chapters reveals the practical nature of the book: Normal psychological growth process; Function of the family in the child's growth: Therapeutic process; Beginning phase of therapy; Child's participation; A fearful child in therapy; A case history; problems arising in working with aggressive behavior; factors that interfere with therapy; The ending phase of therapy; Broader implications of a therapeutic philosophy.

Critique

The Scientist's Reward Sir Ronald Ross, who showed that malaria was carried by mosquitoes, got no monetary reward for his discovery. He had to offer his archives for sale at $10,000 in 1928 because of poverty. Yet Jenner got $150,000 for his smallpox vaccine. Ross was seventy-one at the time of writing; he might have had a peerage had he been able financially to maintain its dignity! (London correspondence *J.A.M.A.*, Nov. 17, 1928.)

Tuberculosis If interested in controversy of a decade or more ago, see S. Adolphus Knopf's article on "Forty Years of Antituberculosis Work" in MEDICAL JOURNAL AND RECORD for December 5, 1928, responding to the famous "Tuberculosis Game" article by Fishberg in the *American Mercury,* and refuting the contentions made therein.

Tonsils An editorial in MEDICAL JOURNAL AND RECORD of December 5, 1928 (p. 598), sort of blew the lid off the tonsil racket, but did it stay off? The editorial considered statistics recently turned in by Kaiser of Rochester and published in *Bulletin* 175 of the Public Health Service. In general it had been found that removal of tonsils did not accomplish half the good results ordinarily expected of and claimed for the operation. The words "normal," "diseased", and "enlarged", as applied to tonsils, were essentially meaningless. The illness rate among children whose tonsils had been removed was still so high as to make the thoughtful wonder whether it was worth while performing the operation. Apparently tonsil removal somewhat reduced the incidence of sore throat and to a marked degree of tonsillitis, but that was about all that could be said with any certainty or honesty. "It is an exceedingly crude procedure, indefinite and unsatisfactory in its results, and we hope that it will soon be superseded by some more refined treatment," the editorial went on. "Perhaps the most important thing we learn from these studies is that, in deciding to remove or not remove the tonsils, we can fairly ignore the condition of these structures, as regards size or 'disease,' and take into account only the incidence of attacks of sore throat."

Community Health Programs Writing on Health in Beard's *Whither Mankind,* published about a dozen years ago, Winslow said that the cost of a standard community health program with health department service, complete public health nursing services, tuberculosis and venereal disease clinics, as well as infant and school hygiene, would be about three dollars per person per year. Double it, and that would be a small sum to pay for the protection afforded, he went on. Make it twelve dollars and you could finance a complete preventive medical supervision service such as university students then got. Say ten or twelve dollars per person per year for complete medical care in lieu of the four times that much illness and very defective and ill-organized medical care cost us about 1928. So Winslow. But instead of doing sensible things we humans prefer to fritter our money away

on tremendously expensive Global Wars. Did you know, for instance, that one shot from a 16-inch gun consumes 1,560 pounds of sugar (for making explosives, after being turned into alcohol)—or enough to supply the sugar rations of a family of four persons for fifteen years? Did you know that to fire a 75-millimeter gun for one hour consumes 2,704 pounds of sugar, or enough to supply the same ration of the same four people for twenty-six years?

Average Day in the Life of a Family Doctor Witnessed removal of a diseased appendix and gallbladder; visited a man of eighty-four with the classic symptoms of arteriosclerosis, three kids and a young school teacher with influenza; saw a death from angina during influenza in a patient whose heart had recently been declared sound by a big clinic; saw a patient with tuberculosis and a man with peptic ulcer in the hospital, a baby with fermentation diarrhea, a man with a sore mouth, a woman with a deformed toe, a patient with indigestion and nervousness following an appendectomy which removed no complaints, a girl with an ingrown toenail, a case of tonsillitis and one of skin infection, a woman with backache; performed two vaccinations and three insurance examinations. Can any doctor be all that wise? Well, see Dr. Wingate M. Johnson's article in *Harpers* for December 1928.

British National Health Insurance According to E. Graham Little, M.D., F.R.O.P., M.P., in *Nineteenth Century and After,* for November 1928, the British National Health Insurance scheme resulted from a Parliamentary Act passed in 1911 which guaranteed an expenditure of nine pence on benefits for every four pence paid in and was sponsored by adroit politicians. By 1928, however, fourteen million people were entitled to benefits, the cost being shared by workers, employers, and the exchequer. The scheme worked through approved societies which dealt directly with the insured. Diagnosis was not included; it was only a sick-insurance scheme. It included such medical treatment and attention as a general practitioner might give.

Vitamin B—Early Days Charles H. Hune reported in the *Journal of Biological Chemistry* for October 1928 (lxxix 723), that he had separated the vitamin B complex in yeast into two vitamins which he called F and G, and he showed that they failed to maintain weight in rats when in combination, the original yeast being better. The antineuritic fraction supplemented autoclaved yeast while the antipellagra vitamin supplemented whole wheat, hence autoclaved yeast was pronounced rich in G and whole wheat in F. Hunt and Krauss (same issue p. 733) said that milk from winter-fed cows was potent in the G or antipellagra fraction but relatively poor in F, the antineuritic fraction.

Hospital Bill Of course nothing like this could happen now, but in 1928 a bill reached a girl lying ill in a Washington hospital of good standing. She had a low salary and was the sole support of her invalid father. Printed in red ink and underlined in red ink by pen were the words: *Payable in Advance.* The girl had just come out of the ether and this was the first thing brought to her attention. Added in pen, also in red ink, were the words "daily before 7 p.m." The bill itself said pay in advance for seven days in the ward, $21; operating room usage $10; anesthetic $15; nurse $35—five days or nights; nurse's meals $7.50; laboratory fee $2. At that time there existed in California a commercially operated hospital, run by physicians, charging a flat daily rate of $6 for room service and extras, consistently paying eight percent dividends on capital stock, and accumulating $100,000 surplus in three years. It paid a stock dividend of twenty-five percent and gave $1,000 monthly to charity—though it gave no free service direct. Bad internal business management accounts for excessive hospital bills and perhaps often fosters the atrocious bad manners with which they were formerly presented. Of course that's all over now.

Women in Abyssinia Some years ago Rosita Forbes, in *From Red Sea to Blue Nile,* discussed the status of women in Ethiopia, a country that has come much into the news since then. The original Ethiopian marriage was a labor pact, the children belonging to the mother. If the woman did her share of the work she could establish such relations as she chose. She was matriarch and inherited all, the brother's possessions going to his sister's children. Later this was somewhat restricted. Christianity entered the scene here in the fourth century. As time went on women got the hardest tasks and man ruled; a male would not grind flour even if starving, nor would a female kill the smallest animal for eating purposes; there was such strict division of labor. Woman helped reap but would not sow, nor drive a plow. The sexes sat separately at banquets and in church; there could be no public demonstration of affection between the sexes. It was scandalous for a man to kiss his wife in public and when the husband returned from the hunt his wife feigned indifference and continued her regular tasks while speaking to him. Villages operated communistically in hospitality to strangers. Weddings required gifts from all, each of a specified value, and married couples of a certain age got land automatically. Engagement was just as solemn as marriage and both ceremonies could be endlessly complicated. Marriage was revoked automatically in cases of epilepsy, leprosy, elephantiasis, imprisonment, infidelity, or sterility. Remarriage was somewhat restricted. There was also legalized concubinage, however. Children of seven could be married by civil ceremony, but a girl had to be twelve and a man twenty to have a due religious ceremony; at twelve a girl could go to her husband who, if still a minor, still shared the parental roof. Both circumcision and clitoridectomy were practiced. Distant relatives could not marry. There were no illegitimate children because the woman's word was irrevocably accepted as to paternity, which certainly would simplify a lot of problems. A man must care for woman and child to the third year even in the most irregular unions. Divorce divided the children and possessions evenly, the woman always getting sufficient to enable her to give a lot to her new husband. If a husband beat his wife a guarantor had to pay her. Woman's word was much honored and respected and she could successfully claim pecuniary recompense for the slightest indignity.

THE CRITIC

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Medicolegal Notes

Change of Treatment Held Not Malpractice

In an action for malpractice against a chiropractor it appeared that the plaintiff had suffered for many years from a type of epilepsy for which there is no known cure, that he had used phenobarbital for many years as a palliative and knew its effect and the effect of its discontinuance. He went to the chiropractor for treatment, which he received by manipulation of his spinal column. There was no claim that this treatment had any harmful effects. It was claimed, however, that the discontinuance of the use of phenobarbital resulted in more frequent and more intense convulsions, and that this discontinuance was on the direction of the defendant.

But the plaintiff testified that he knew when he went to the defendant that his profession did not believe in the curative qualities of drugs and relied solely on manipulation to accomplish beneficial results. As soon as the taking of drugs was resumed, plaintiff's prior condition was restored and apparently improved over that preceding the defendant's treatment.

The Ohio Court of Appeals, Kirschner vs. Keller, 42 N. E. 2d 463, affirmed judgment for defendant on a directed verdict, because it appeared that plaintiff submitted to the discontinuance of phenobarbital voluntarily with full knowledge of the consequences in the hope that the chiropractic treatment would effect a cure. It was not claimed that defendant guaranteed a cure, and there was no evidence that any harm resulted from the treatment; so that plaintiff had no cause for action.

Hospital Tax Exemption

A two and a half acre pine grove lot and some vacant land were acquired by a hospital, together with the tract containing the buildings being used as a hospital. This lot was intended for use in the erection of additional hospital buildings, but was not in actual use except that patients and nurses walked in it and sat in chairs scattered throughout the grove. In an action by the hospital to recover back taxes paid under protest, the Maine Supreme Judicial Court held, Osteopathic Hospital vs. Inhabitants, etc., 26 A, 2d 641, that the grove was occupied by the hospital for hospital purposes within the meaning of the Maine tax statute, so as to be exempt from taxation.

Property used exclusively as a home for student nurses, located about two blocks from the hospital proper, and owned and operated by a nonprofit hospital association as a necessary part of a hospital used exclusively for charitable purposes, was held exempt from taxation under the Ohio statute. Aultman Hospital Ass'n vs. Evatt, Ohio Supreme Court, 42 N. E. 2d 646.

Reopening Award for Additional Medical Expenses

A clergyman accepted a $350 compensation award for a back injury caused by a fall on the church steps. The award was based on a stipulation of the parties approved by a referee of the industrial commission. There was no evidence in the hearing before him of spinal injury. The stipulation covered expenses previously incurred but not further medical expenses. Some months later, the clergyman, to secure relief from sciatica, submitted to a surgical operation which showed that "the ligamenta flava of the fourth and fifth lumbar interspaces were found to be thickened and abnormally fibrotic." This condition the operating physician attributed to the injury. The clergyman applied for a rehearing of his case. On appeal, the Minnesota Supreme Court Board, Leland vs. St. Olaf Lutheran Church, 4 N. W. 2d 769, held the commission should have reopened the case and granted a rehearing notwithstanding a conflict in the opinions of physicians other than the operating physician, as to the nature and extent of the injury claimed for.

Opinions Based on Autopsy and Undisputed Facts Admissible

In a workmen's compensation proceeding for death from coronary occlusion the Iowa Supreme Court held, Gurgon vs. Swift and Co., 295 N. W. 185, that the opinions of two physicians that the occlusion was caused by exertions in the course of employment were not inadmissible as being based on mere guess and conjecture where they were based primarily on an autopsy and the undisputed facts as to the workman's exertions at the plant within an hour prior to the onset of pain.